June 1978

Smithsonian

Israel's graphic display of the far-flung Diaspora (p. 32)

Samuel Ha-Nagid (right)
Jewish chief of Moslem army,
writes to son before battle

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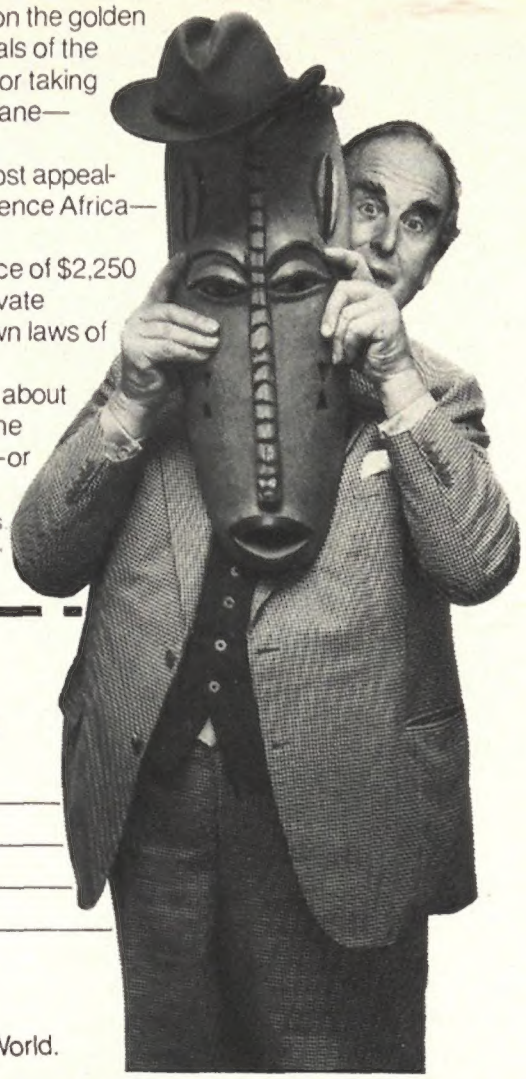

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the Rose's Moment

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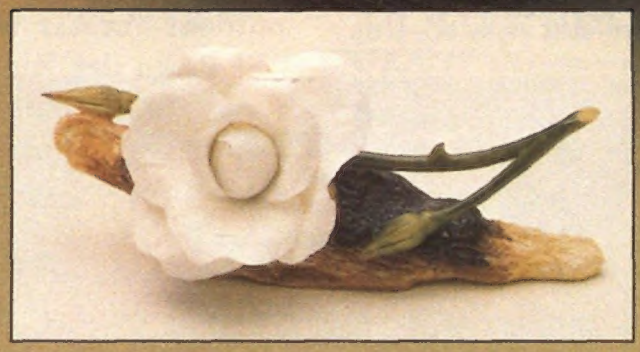

The rose's moment of perfection comes and goes. Boehm's artists capture it for you in porcelain sculpture of beauty comparable only to nature's own. From our Boehm garden: (Top) Tropicana Rose, limited issue, 5" x 10¾" x 7", $450. (Center) Rainbow Roses, pink, white,

and yellow as shown, and also in mauve, Tropicana, and red, 6½" x 3½", open collection, each $85. (Bottom) Silver Jubilee Rose, honoring Queen Elizabeth II's 25th anniversary, 4" x 8½" x 5", $250. Something Beautiful for Everyone.®

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Secretary Ripley's comments

The view from the castle

Aware of its ethnic roots and proud of its history, San Antonio can show some other cities how to improve the quality of life

Each spring the National Board of the Smithsonian Associates has met in a city of its choice. This year the Board chose San Antonio, and what a remarkable experience it was for those who have not visited this active Texas city recently.

Board member Arthur A. Seeligson jr. and his wife—aided by a local committee that included museum directors, preservationists and other "doers"—provided a revealing glimpse into the city. We were shown not only its reinvigorated core, the River Walk, the old Spanish section of La Villita and other restored areas, but also the spirit behind it all. Once again I am reminded of the vigor that is in San Antonians, the determination to make their community glow—with enterprise, thoughtfulness and care for the future.

It is an ennobling subject, for the history and the extraordinary variety of ethnic roots that make San Antonio what it is seem still close to the surface. In this setting people do not forget where they came from. On every hand, Indian, Mexican, Spaniard, German and Yankee have all had their effect, and they are not forgotten. To visit the old Spanish missions and hear a mariachi Mass, or to visit downtown and talk to architects and businessmen, is to become aware of their respect—love—for the history of this handsome city and their enthusiasm for its preservation.

That enthusiasm is exemplified by the San Antonio Conservation Society, which was founded by a group of public-spirited women in 1924 and incorporated in 1925—long before most American cities had given a thought to preserving their heritage of historic architecture or natural beauty. The San Antonio ladies failed in their first objective, which was to preserve the old Market House. Undaunted, they turned their attention to a downtown bend in the San Antonio River that was about to be straightened and paved over by a flood-control project.

Here they were successful. In the following years, the river was rechanneled, its banks were stabilized and landscaped, and walkways, footbridges and an outdoor theater were built. Since extended, this is "El Paseo del Rio," or River Walk, which—with its shops, restaurants and festive activity—is the most distinctive feature of downtown San Antonio (SMITHSONIAN, September 1975).

Is there a lesson for other American cities here? As a resident of Washington, I cannot help feeling that there is—if only in the regional pride which wells up in this place. Washingtonians are proud of their city, too. But who are they? It has always been an enigma, for Washington has a mass of people who merely work in it, using its streets and offices while thinking of somewhere else. The U.S. government has a brooding and monumental impact by its presence, but not notably by its loyalty to the environment in which it lives.

But this ebbing and flowing tide of people has needs as great as those of San Antonians—pride of place, a life of its own, ethnic consciousness. So do the populations of other American cities. It is these things that the Smithsonian has tried to stimulate through the years, to remind us of our local history and of our cultural roots, which can be evoked to reinforce the joy of everyday life.

S. Dillon Ripley

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*Survey conducted among owners of new cars bought in May, 1977.

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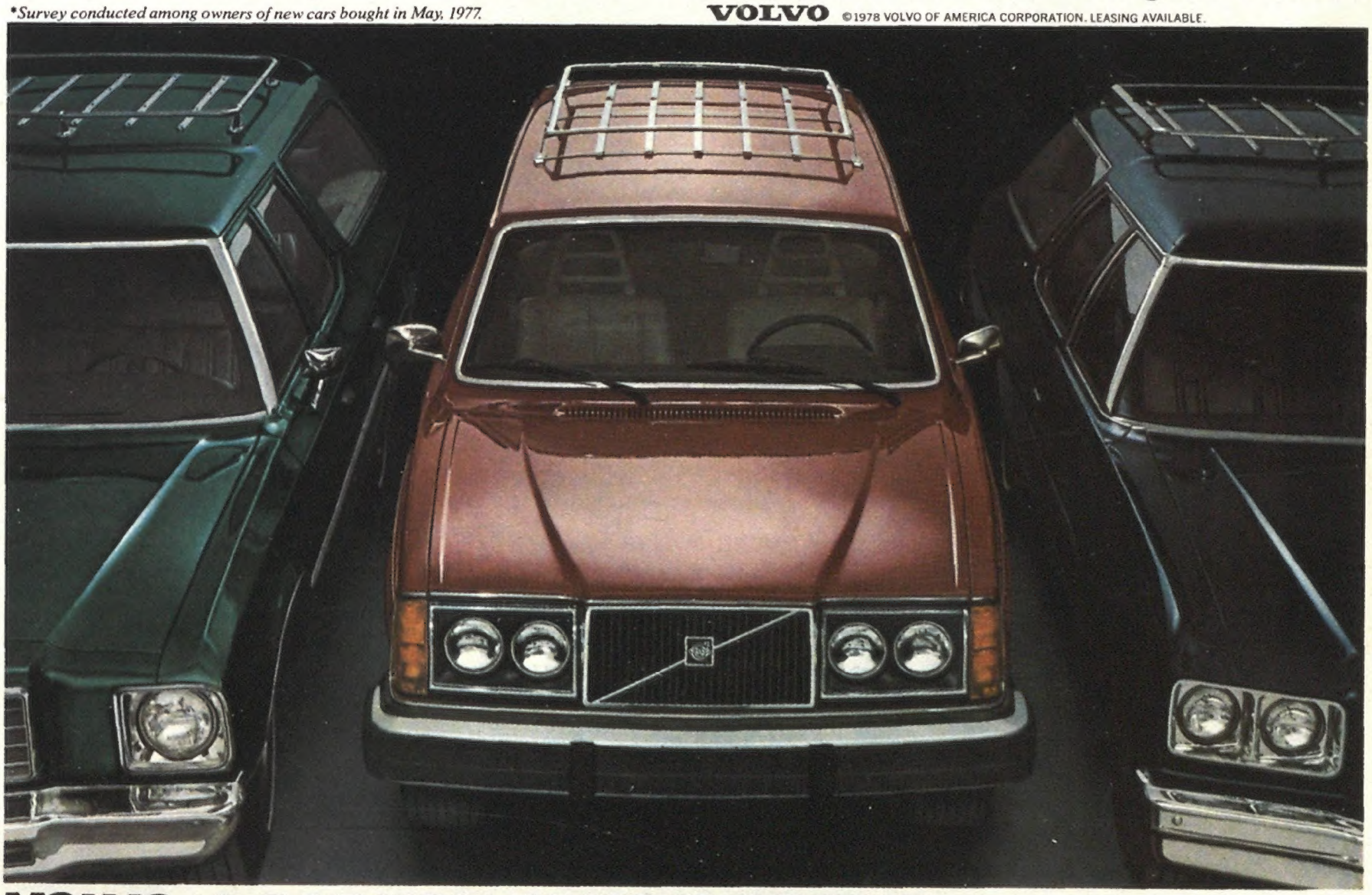

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"The Prescription"

Pharmacy Stamp First Issued Cincinnati, Ohio, Nov. 10, 1972

"Busybody"

Mail Delivery Stamp First Issued Washington D.C., Oct. 26, 1963

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Covers shown smaller than actual 7½" x 4" size.

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Rockwell's John F. Kennedy, "The World Remembers" . . . with 1964 U.S. John F. Kennedy Memorial stamp.

Eisenhower? Or those lovingly detailed portraits of everyday Americans enjoying and sharing in the blessings of American life?

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Rockwell's World War I sailors, "Memories" . . . with U.S. Navy stamp of 1945.

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Rockwell's sleeping trainman, "Between Trains" . . . with U.S. Railroad Engineers stamp of 1950.

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For instance, Norman Rockwell's cherished portrait of President Kennedy with the 1964 stamp issued in Kennedy's honor . . . "Memories," a World War I Rockwell classic, with the 1945 stamp honoring the U.S. Navy . . . "Between Trains," with the 1950 stamp honoring the Railroad Engineers of America. Notice how "The Donation" enhances the meaning of the 1952 stamp honoring the International Red Cross. "Signs of

Rockwell's young Red Cross volunteer, "The Donation" . . . with U.S. International Red Cross stamp of 1952.

Spring" is the ideal match for the 1953 stamp honoring the Future Farmers of America . . . and "Saturday's Heroes" for the 1969 stamp commemorating the 100th anniversary of football.

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(Continued on next page)

Boy Scouts Stamp First Issued Washington D.C., Feb. 8, 1960

American Music Stamp First Issued New York, N.Y., Oct. 15, 1964

A beautiful blend of Rockwell Classics and historic U.S. stamps!

(Continued from previous page)

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Commercial Aviation Stamp First Issued Chicago, Ill., March 19, 1976

Every month you receive covers like "The Flutist" bearing the 1964 "American Music" stamp . . . "Passing Colors" with the 1960 Boy Scouts stamp . . . "The Wonders of Flight" with the 1976 commercial aviation stamp . . . "The Alarm" with the 1948 Volunteer Firemen stamp.

Volunteer Firemen Stamp First Issued Dover Del., Oct.4,1948

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Letters to the Editor

Dangerous dams

Dear Sir: As a professional civil engineer who has been working on water resource projects, including dams, for more than 40 years, Gaylord Shaw's excellent article, "The search for dangerous dams—a program to head off disaster," in the April issue, was particularly interesting.

Many unplanned flows of water over concrete dams have taken place without severe damage to the structure. All recorded failures of concrete dams have been foundation or abutment failures; in the 50 years since the collapse of the St. Francis Dam in California—mentioned by author Shaw—no major concrete dam in the United States has failed. There is no known failure of a concrete dam because of an earthquake, which, as Mr. Shaw stated, is the principal concern at the site of Auburn Dam, 30 miles northeast of Sacramento. Obviously, a great many concrete dams in California have been severely shaken by quakes. These include Crystal Springs Dam, a very old (completed in 1890) concrete arch dam, only 20 miles from downtown San Francisco. It is practically on the San Andreas fault, but the earthquake that caused so much damage to that city in 1906 caused none to the dam.

Carl R. Wilder
Portland Cement Association
Skokie, Illinois

The large majority of nonfederal dams being investigated at President Carter's behest are recreational earthen dams. Gaylord Shaw, who wrote our article, won the Pulitzer Prize (opposite) for his series in the Los Angeles Times *on unsafe structural conditions of dams.* Ed.

Dear Sir: The Auburn Dam site, discussed in Gaylord Shaw's article, is crossed by known faults which could be triggered by water penetration under the 675-foot hydrostatic head, or the tremendous mass of water to be impounded —some 800 billion gallons.

One report from the California Department of Water Resources to the Federal Bureau of Reclamation, dated February 10, 1977, in discussing the effects of recent earthquakes in the general area of the Auburn Dam, such as the Oroville earthquake of August 1975 (magnitude 5.7), states: "There is also the possibility that local earthquakes could be generated by the reservoir itself, if the conditions were right as has happened in other places throughout the world. The possibility of reservoir-induced earthquakes of the approximate magnitude 6 to 6.5 should be considered for all important dams and reservoirs. The Department [Water Resources] was convinced that it had to make the strongest recommendation possible to the Bureau of Reclamation about its position on the earthquake and seek the cooperation of the Bureau in [supporting] our point of view."

Walter G. Miller
Weaverville, California

The Bureau of Reclamation recognizes that there are faults that cross the Auburn Dam site and says these faults are currently being investigated to determine the age of the last movement. Ed.

Dear Sir: Living in a fault area does not give one a sense of total safety. Nor does the impending doom permeate every waking moment. You learn to live with the possibility. However, anyone building a dam, or for that matter a nuclear reactor, on a possible fault area has got to be foolish.

I am relieved to hear that something is being done to curb the human tendency to believe that what Man builds will always remain safe.

Martha L. Boese
Los Altos, California

Wizardry of sci-fi film

Dear Sir: Being a serious and avid enthusiast of science fiction, I was quite pleased with Leo Janos' article on the special-effects wizardry of John Dykstra. Your description of the techniques and the excellent photographs were impressive. Perhaps many of those who cheered when Han Solo propelled his customized starship into faster-than-light speed to escape the imperial storm troopers will now realize the great dedication and patience it must have taken to put that magic moment, among many others, on celluloid. A culture that doesn't dream of the stars is doomed to stagnation, and it is Mr. Dykstra and others like him who personify those dreams through their technological genius.

Michael Kloongian
Waltham, Massachusetts

View from the castle

Dear Sir: "The fragility of life on this

Fellow *Los Angeles Times* staffers congratulate Gaylord Shaw (center) for winning the Pulitzer Prize.

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Above: *Footed Bowl.* The exact purpose of this five-thousand-year-old Egyptian "walking bowl" remains somewhat of a mystery, but perhaps it is significant that many centuries later, a bowl with feet was used as the hieroglyph "to bring." The Museum's copy, like the original, is unglazed terracotta burnished by hand. Diameter 5". Price $15.00, shipping $2.00. Add state and local taxes for delivery within N.Y. State.

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planet" to which Secretary Ripley refers in his column is what keeps me awake nights at my ripe old age of 86. Of all endangered species, Man is the least protected. Much of USA 1978 is falling apart. Dams are bursting. Inner cities are dying. Interstate highways are neglected. Roadbeds of railroads are unsafe.

Secretary Ripley, quoting Thomas Jefferson, says, "The care of human life and happiness, and not their destruction, is the first and only legitimate object of good government." But we seem to be heading from crisis to crisis to disaster.
W. A. Doppler
Florham Park, New Jersey

Book review

Dear Sir: If "jazz in its pure form" is dead, I can't understand why some 100,000 fans were flocking to Sacramento Memorial Day weekend for the fifth annual Sacramento Jubilee of Dixieland Jazz, or why some hundred jazz clubs are flourishing in all parts of the country.

When David Lancashire reviewed *George Lewis, A Jazzman from New Orleans,* he should have been aware that his hometown of Toronto boasts a club. When he says "jazz in its pure form" seems to be on its way to the "embalmers" he can defend himself by hiding behind his own definition of "pure jazz."
John V. Fanning
Salinas, California

Royal water lilies

Dear Sir: Thomas E. Lovejoy's article, "Royal water lilies: truly Amazonian," brought back memories to me. About 70 years ago, the Henry A. Dreer Nursery in Riverton, New Jersey, grew the great *Victoria* water lilies in a special pond—an unbelievable sight. I remember the nursery advertised it with a small boy standing on a leaf. The Dreer Nursery imported many exotic plants from various parts of the world—and it may have been in the packing around some Japanese iris that the Japanese beetle was brought into the country.
Edythe Ferris
Philadelphia

Around the Mall and beyond

Dear Sir: With reference to Edwards Park's comments in "Around the Mall

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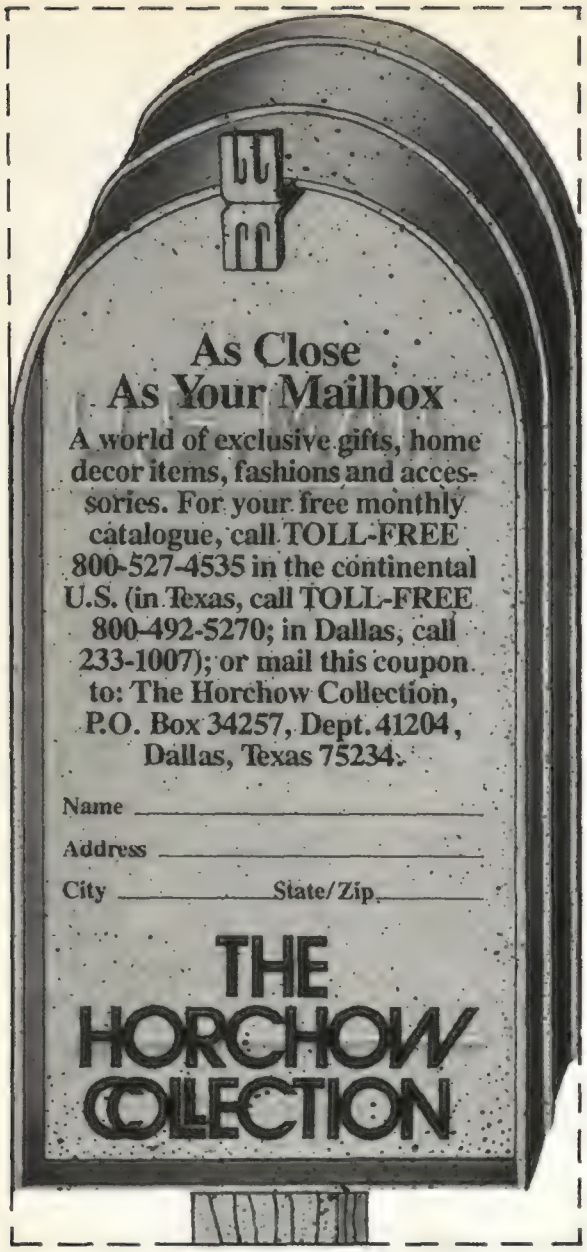
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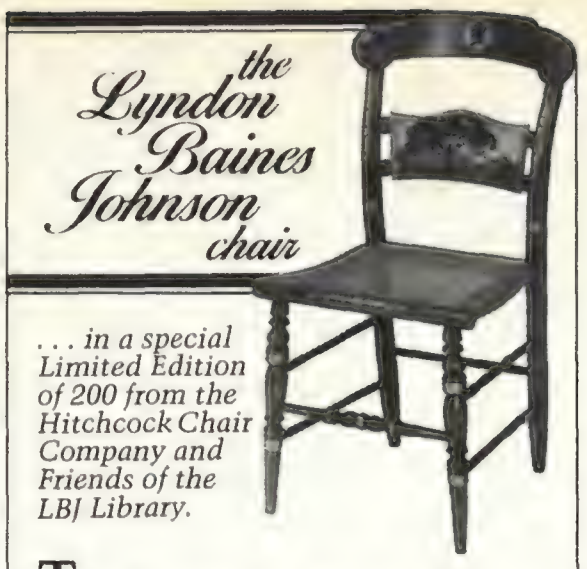

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and beyond," the nene goose of Hawaii is not particularly shy in the wild state. Luckily, it is protected locally, for it is possible to approach the birds very closely at times, and I even caught a female by hand in a lava crevice in November 1964. She had areas of plucked feathers ("brood patches") on the breast, indicating she had been nesting. But there was no sign of young and she flew away easily when I released her.

S. Dillon Ripley
Washington, D.C.

Dates

Dear Sir: Enjoyment of reading Michael Olmert's "1066, OK, but let us not knock good old 1885" ended abruptly at the point where he wrote of "luminaries who died in the first year of a century: Chaucer (1400) and John Dryden (1700)."

Now just a minute—er, century. With the end of our own century almost in sight, let's review the facts.

The first decade of the Christian era began with the year one and ended with the year ten. So the first century ended with the year 100, and the second century began with the year 101. If all this is true, then Chaucer and Dryden died at the ends of their centuries, and the third Christian millennium, if we hold out that long, will begin in 2001.

Morris Buske
Oak Park, Illinois

SMITHSONIAN *goes along with historian Mark Sullivan, who felt this way about the turn of a century: "January 1, 1900, appeals to the human imagination, seems to the eye, and sounds to the ear, more like the beginning of a century than does January 1, 1901."* Ed.

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Around the Mall and beyond

The new General Aviation Gallery at the National Air and Space Museum was designed to show visitors that private flying has been going on a long time, that it is enormous in scope and that it's a lot of fun. To check up on that last factor, I wangled a chance to look the gallery over a few days before it opened. Curator Don Lopez and co-curator Tim Wooldridge took me through and watched like patient parents while I played with equipment that has been set up to allow any ordinary mortal to feel that he might just be able to fly an airplane.

There are lots of simple (ha!) computerized devices that supply you with a list of airports within a 50-mile radius of whatever zip code you've fed in, or that give you a quiz on aeronautical subjects. There are 33 model planes—some beautifully made—that cover the field of general aviation from the days of the Wright Model B of 1909 to the Cessna 150, which is still a standard private training plane of today. There is a film about flight control in which actor Lloyd Haynes (star of TV's "Room 222") explains that flying is a smooth and logical process without any need for heroics, despite the arguments of a helmeted and goggled "ace" who insists that it should only be regarded in terms of loops and power dives.

There are also two famous general aviation ("G.A.," we birdmen call it) planes suspended from the ceiling of the gallery—a Learjet, designed to whisk business executives a thousand miles or so in time to seal a hot contract, and a Cessna 180 that was flown around the world. And on the floor stands that old favorite, a Piper Cub.

The part of the gallery that undid me was the row of three flight simulators—Link trainers, we used to call them—all set up to give the average schnook a chance to show how uncoordinated he is when he tries to fly a plane on instruments. I approached one with a vestige of confidence because I had been subjected to simulators long ago, and these electronic ones are really better and perhaps easier than the vacuum-powered ones of the old days.

Flight simulator at Air and Space

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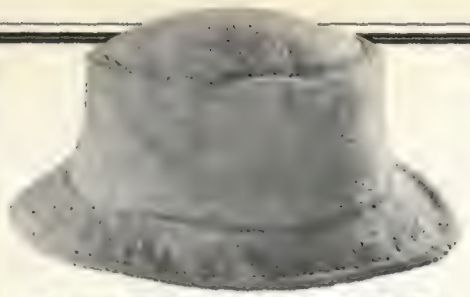

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I tried a takeoff and then some gentle turns, climbing and gliding, and felt that with a bit more time I would get the hang of it. But I had an appointment, so I decided to "land" my simulator and call it a day.

I reduced power, established a glide, watched the altimeter unwind until "0" approached, and then flared out gently and (I thought) touched down. Not bad, I told myself. I cut off the power and got out. But the simulator kept on flying. Its gyros hadn't run down, and although the switches were off, it was still working. What's more, it had never really landed. As I started to leave, I heard a sharp, rubbery "clop" behind me, and Lopez pointed out that the simulator had just simulated a touch on the runway and a bounce back into the air.

We both headed back for it, to still its mysterious power, but there was another "clop" and we instinctively recoiled, realizing that it had bounced again.

It was too much for me. With a hurried apology to Don I headed out of there, uneasily aware that I was walking hastily along a computerized runway with an electronically alive aircraft hopping along behind me as if in reproach for never having been properly landed. There were three more "clops" by the time I reached the door, and they seemed to be getting closer. I turned the corner so that Don couldn't see me, broke into a nervous trot and jogged all the way back to my office. It seemed a convenient time to take up an activity that, admittedly, I have perhaps slandered in the past.

And if one must jog, as I felt compelled to, the National Air and Space Museum is the place to jog to or from. Its former director, ex-astronaut Michael Collins, is a jogger of such ambition that this year he entered the Boston Marathon, a 26-plus-mile event that marks Patriot's Day, the anniversary of Paul Revere's marathon on horseback.

Mike says he enjoyed every jarring step on that overcast, fiftyish-degree day. There was a bit of rain to cool him, and as an old flyer he noted a tailwind to speed him over the course. He says that as he neared the finish line he was cheered on by roughly half a million Bostonians, all of whom appeared to be related to his wife.

Collins didn't make the record book, but he finished, which isn't bad for a 48-

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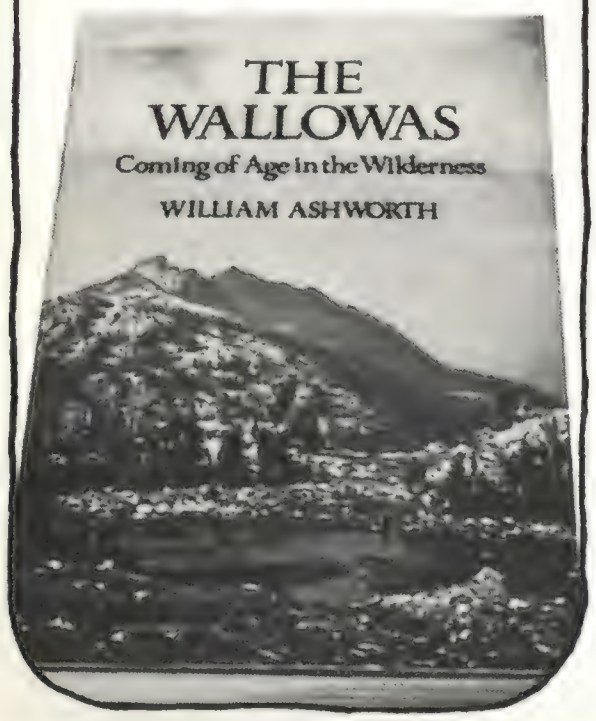

Michael Collins in the Boston Marathon

year-old. He says he crossed the line one hour and seven minutes after the winner, who was showered and rested and stuck into his third beer by the time Mike panted in.

Collins has recently been named Under Secretary of the Smithsonian, an appointment that he may have earned, in part, by supervising the construction of the National Air and Space Museum with such an expert hand on the reins that it opened three days ahead of schedule and cost several thousand dollars less than its budgeted figure—both Washington records of sorts. He may also have acquired a few points by maintaining such enormous appeal in his museum that it's Washington's top attraction—bigger than the White House, bigger than Congress, bigger even than the Press Club bar. Or he may have achieved his laurels by having the kind of disciplined, determined drive that sends a person out on a lousy morning to jog. I'm not like that, but I admire it from a distance.

In our hierarchy at the Institution, only David Challinor, Assistant Secretary for Science, comes to mind as another athletic competitor (a phrase we feel compelled to use instead of "jock"). Dr. Challinor has won some sculling races. Back through our history, no other athletic competitors in the secretarial ranks leap readily to mind. Active, sturdy and adventuresome people, yes. Jocks, no.

I asked Mike Collins what he wore along that grueling course. He sent in the picture above, taken by his 16-year-old daughter, Ann. I know I promised never to mention Frisbees again, but I have to point out that that's a Smithsonian Frisbee Festival T-shirt he's got on.

Frisbees and simulators are more fun for men than for women because the devices are essentially dream machines, and men are more prone to dream than women. Are they? Please don't write in that this psychological observation is a lot of hogwash. I base it solely on the fact that I am much more of a dreamer than my wife. I quite understand that the theory has no validity, but at least it's a way to change the subject.

Presuming that women may often be more interested in fashions than in simulators, a display in a glass case in the Museum of History and Technology could possibly intrigue them. It's a little exhibit of the fashions of Adrian. He was one of Hollywood's top designers, whomping up styles for Norma Shearer and Greta Garbo and Joan Crawford and his own wife, Janet Gaynor. His clothes tended to have broad, padded shoulders and simple, sort of mannish lines, and seemed to me to make everyone who wore them in the Thirties and Forties look like Irene Dunne. Since I was always crazy about Irene Dunne, that was OK by me.

The Smithsonian people who put this little show together asked for help from the public and got about 150 responses. About 40 Adrian items (almost all wedding suits) eventually were sent in, along with pictures of the donors in their Adrians. Of these, several photographs and three pieces were ultimately chosen for display—a gown, a suit and a hat. Get around and see them, all you Irene Dunne admirers, before the exhibit is closed later on this month.

And while you're in that museum, you might step upward from Adrian's case on the Constitution Avenue level to the First Ladies area on the Mall level, and backward in time from Irene Dunne, et al, to Mrs. Jefferson Davis, First Lady of the Confederacy. Her jewels are on display and worth a look.

To find them, probe around among the First Ladies until you find the Victorian Parlor, with Mary Todd Lincoln more or less dominating it. To your left you will discover Martha Johnson Patterson, daughter of Andrew Johnson. Go past the exhibit in that direction and turn right, and there is the small jewelry display in the right of the case. It's nice: a crystalline necklace, bracelet and brooch

Mrs. Davis wore as a bride, an emerald and diamond engagement ring given her by the then Mississippi politician, a tiny

Mrs. Jefferson Davis' enamel watch

gold and blue enamel watch, and other gifts as gentle as her deliciously Southern name, Varina. One cameo bracelet is nearby, in the case devoted to First Ladies' jewels.

The display not only charmed me, but served to remind me that all the faces of the First Ladies, past whom I walked to reach Varina's modest treasures, are really the same face. This fact, I realize, is one of many that are known by everyone in the world except me. But if somewhere there lurks another ignorant slob, let me point out that the features are exactly the same, except for the treatment of the eyes, from Martha Washington right on to Betty Ford.

I had noticed earlier that the noses were remarkably similar, but had put it down to a time-saving trick by the makers of the mannequins. No one could tell me that, nose aside, Jackie Kennedy had the same face as Florence Harding. But she does. And right beside Mrs. Harding's figure, out on the concourse, is the model for this ubiquitous First Lady Face. It's a bust of Cordelia, King Lear's daughter, done in 1865 by Pierce F. Connelly of Louisiana. Her face does for Dolley Madison and Mary Lincoln and Julia Grant and "Lemonade Lucy" Hayes and Eleanor Roosevelt and all the rest of them, in-

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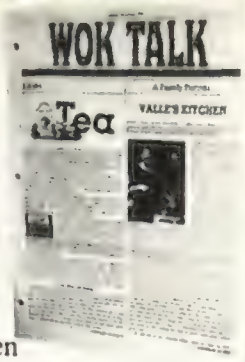

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cluded Rosalynn Carter, who hasn't yet (at time of writing) come through with a gown. The differences we see in all their faces come from that slight change in the set of the eyes, from hairdos and clothes and also from a very large helping of imagination.

Bella Abzug hasn't yet made it into the White House on a permanent basis, but she showed up nearby—at the Museum of History and Technology—to officiate at the presentation of artifacts from the November 1977 National Women's Conference in Houston. The main artifact was a large, metallic, unlighted torch, which had been carried from Seneca Falls, New York, site of the birth of the women's movement in 1848, to Houston by relays of several thousand runners of the appropriate sex. It looked a little jaded after all this, but Director Brooke Hindle assured everyone that it would take its place in the museum along with Susan B. Anthony's gavel.

After some confusion as to whether Bella Abzug should be called Congressman or Congresswoman or Congressperson or just Bella, since she lost her last try at the job, Judy Carter, the President's daughter-in-law, spoke a few good words about women, and the crowd drifted off to a reception.

"Tea and cookies?" asked Bella, suspiciously, and went on to point out to her fellow feminists that "we can never get rid of the past."

On the tenth of this month, boomerangs will once again go wheeling around the Polo Field near the Mall as the fifth annual "Now You See It—Now You Don't—Now You See It Again Smithsonian Resident Associates Boomerang Corroboree" gets under way. Organizer Benjamin Ruhe (see this column, August 1977) tells me that he's got so many events and competitions planned that the sky over the Polo Field will be dark with whirling boomerangs. He wants me to try and throw one again, but I don't know. I've now become a Frisbee freak, and if I keep on getting enthusiastic over Mall events, this office, already sufficiently chaotic, will be such a tangle of kites, models, Frisbees, boomerangs, assorted craftsmen and Blue Grass musicians that I shall be forced out of it. It might be a good thing, too.

—Edwards Park

HOW TO REDUCE RUST

YOU MAY BE WASHING THE WRONG SIDE OF YOUR CAR.

Spring is a perfect time to do something about rust.

Rusting is a year-round problem, and corrosive conditions have become a lot worse in the last five years.

If you live where salt is used to melt ice on the roads, that is speeding up corrosion on your car. If you live in the country, it's the calcium chloride that's spread on dirt roads to hold down dust. And corrosive chemicals in the air are causing rust in every part of America.

We're doing something to help prevent rust on the new cars we're building. Meanwhile, you can do something about reducing rust on your car.

It's important to wash your car often. Use a mild soap and lukewarm or cold water.

Please don't neglect the underside of your car. The worst rusting happens from the inside out. That's because salt, slush, and even mud tend to collect in the crevices underneath the car, in the door creases, and inside the fenders. Moisture gets trapped in those places and causes rust. So try to wash the underside of your car, too. In winter, if you can, and at the first opportunity in spring. Even if it's only a few times a year, that would help some.

If your car gets dented, scratched, or chipped, try to get it repaired as soon as possible. Even a "small" scratch is bad. Because once a car starts to rust, the damage spreads fast. The paint around a dent or scratch can look okay, but rust is spreading underneath. In the long run, it's cheaper to fix the car right away.

A lot of people think that parking a car in a heated garage during the winter will help prevent rust. But it's just the opposite. Cold slows down the rusting process, as it does most chemical reactions.

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Phenomena, comment and notes

The perils of exercise, hot debate over warm-blooded dinosaurs and the leap from hominid to Man

A nagging question in the story of human evolution is what factor or factors triggered the change from hominid to *Homo sapiens?* Glynn Isaac, an anthropologist at the University of California, Berkeley, believes he has found the key to the mystery in his work with Richard Leakey near Lake Turkana in East Africa.

Writing in *Scientific American* (Vol. 238, No. 4), he reconstructs a site habituated by protohumans—short, small-brained creatures who were presumably our ancestors—some 1.5 to 2 million years ago. It was a well-shaded, dry, sandy riverbed where a small band accumulated several hundred stone tools and the bones of hippos, giraffes, gazelles and so forth. Since the riverbed had no stones in it as large as the stone tools, they must have been carried in, and like the stones, "the bones were carried in, presumably while there was still meat on them."

Thus, these hominids had departed from the norm of subhuman primates, which feed as they roam about and neither bring food back to a home base nor share it with one another. How did this unusual behavior come about?

Isaac hypothesizes that, as meat came to be a significant part of the diet for these creatures, a division of labor would have taken place between the sexes, with males taking on the role of hunters (and scavengers) and females, less mobile because of children, being gatherers of vegetable food. Stone tools—simple, sharp implements made by banging stones together—would have become necessary to deal with larger animal carcasses.

So we have tool-use, a division of labor, home bases, and food-sharing—all new in subhuman primate behavior, a wholly new interrelated "strategy" for survival that unquestionably set these protohumans on the course towards humanity. And the key to it all lies in one crucial capacity—the ability to carry things about. Some device for carrying stones and significant amounts of food—such as a simple bark tray (of which there are no actual remains)—must have been, as suggested, "the basic invention that made human evolution possible."

One can speculate (particularly if scientific credentials are not a worry) that it was the females who thought up the bark tray, thus setting off the most crucial bit of evolution we can imagine—and thus, selflessly, becoming the first beasts of burden.

Hot, hotter, Hotton

Congressmen and others whose job it is to account for the expenditure of money may, from time to time, wonder why scientists do what they do. For example, there is currently an intense debate being waged over the nature of the heating system employed by a group of creatures extinct now for 70 million years.

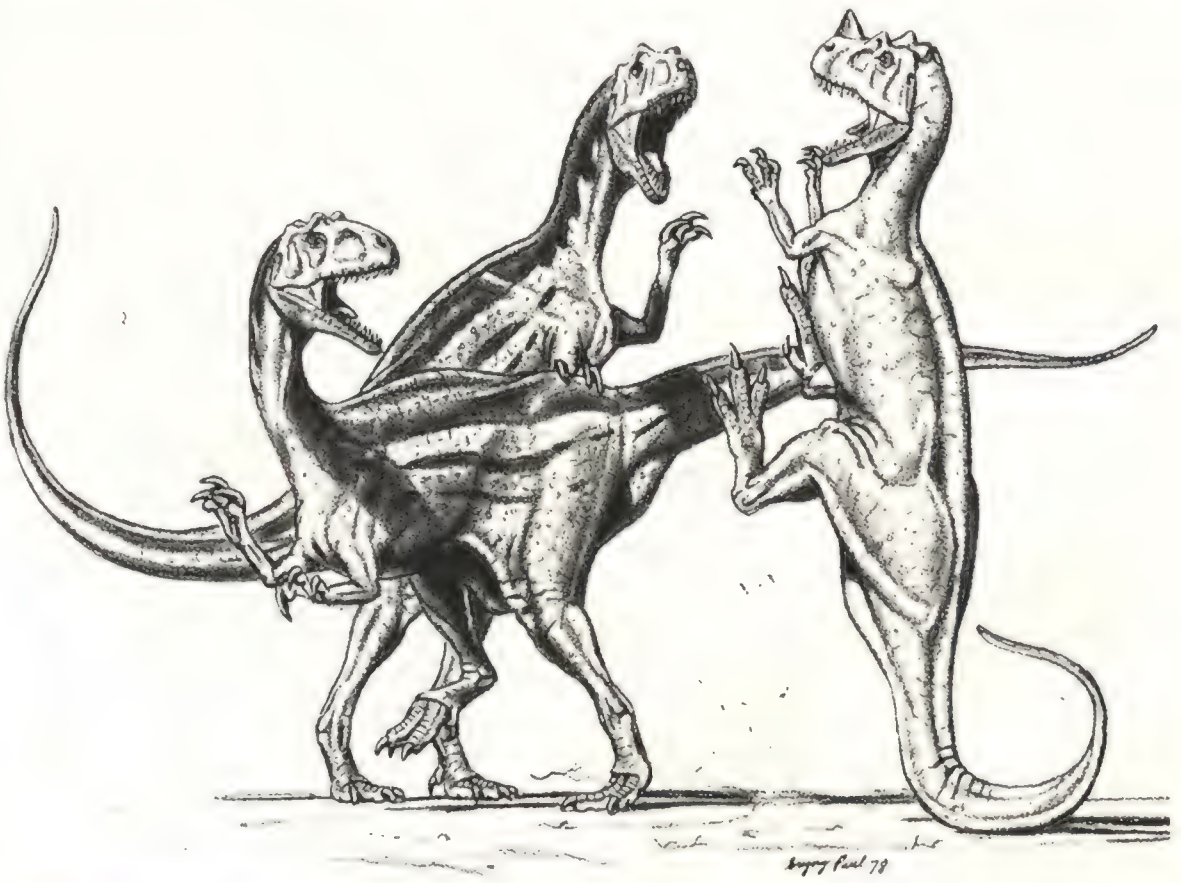
This debate has to do with dinosaurs.

Recently it was suggested, rather revolutionarily, that these reptiles were, unlike others, warm-blooded rather than cold-blooded. "Warm-blooded" was immediately hyped up to "hot-blooded" and the polite and speculative war was on.

Only warm-blooded animals walk erect with their legs vertical and that's what dinosaurs did, it is said, their anatomy and footprints being evidence; cold-blooded things like lizards have a sprawling stance with a good part of their legs horizontal. Warm-bloodedness requires high blood pressure; so does a creature with its head carried above its heart. (Brachiosaurus' neck was 18 feet long, calling for enough blood pressure on sheer hydraulic grounds to permit the notion of warm-bloodedness.) Dinosaurs have vascularized bones like mammals and birds. Dinosaur tracks have been found as far north as Spitsbergen in the Arctic and you need to be warm-blooded to live up there.

All of this changes the picture of dinosaurs in one's mind. No longer do they seem huge slow-moving monsters, but huge fast-moving monsters, charging about actively across the Cretaceous landscape with more drama than even Walt Disney could muster in *Fantasia.*

But then, as usual, enter the naysayers. The vascular bone structure also is seen in some large cold-blooded animals, they



A Ceratosaurus, right, battles two allosaurs, all erect

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say. The kind of heart needed to pump blood up an 18-foot neck doesn't automatically mean warm-bloodedness. The globe was warmer overall and, just because the dinosaur stepped in the mud of Spitsbergen, it doesn't mean he lived there all year round.

At the Smithsonian, a fossil reptile specialist, Nicholas Hotton, has watched this paleobrouhaha with interest and says that it is large size that is the main point. Bone structure and vascular bones may be a function of great size. There were, he points out, no small dinosaurs, the tiniest being the size of a chicken and the assumption being that chickens are large (which they are if you think of the maximum attained by a mole). More than half of the dinosaurs weighed more than two tons. Size, not the nature of the heating system, determines the rate animals lose heat, says Hotton. Large Komodo dragons, which are cold-blooded, retain heat as well as mammals their size.

In short, it's all up in the air, the kind of scientific controversy of which we can all be proud since it produces neither bombs nor clones: a straightforward case of human wonder about some mysterious creatures who dominated the planet longer than possibly we will.

Civics lesson

Every now and then the pressures of public opinion and well-meaning medical advice become so oppressive as to lead to thoughts of taking up the latest fad: exercise. Fortunately, farsighted elements of society tend to assert themselves at such times and dampen silly, modish enthusiasms.

A case in point: just as spring began its heady emergence in the nation's capital, the National Park Police restored a decent sense of proportion and moderation to life by arresting a government official for doing 30 in a 20-miles-per-hour zone. The official was on a bicycle. A few simple calculations show that even a superannuated scribe could conceivably break the law in the vicinity of a school (15 mph), possibly even on foot, however brief the spurt.

Abiding by the law being the chief civic obligation of right-thinking folk, it is a relief to find that the urge to overtake the sweaty pack has subsided once again to zero.

—James K. Page Jr.

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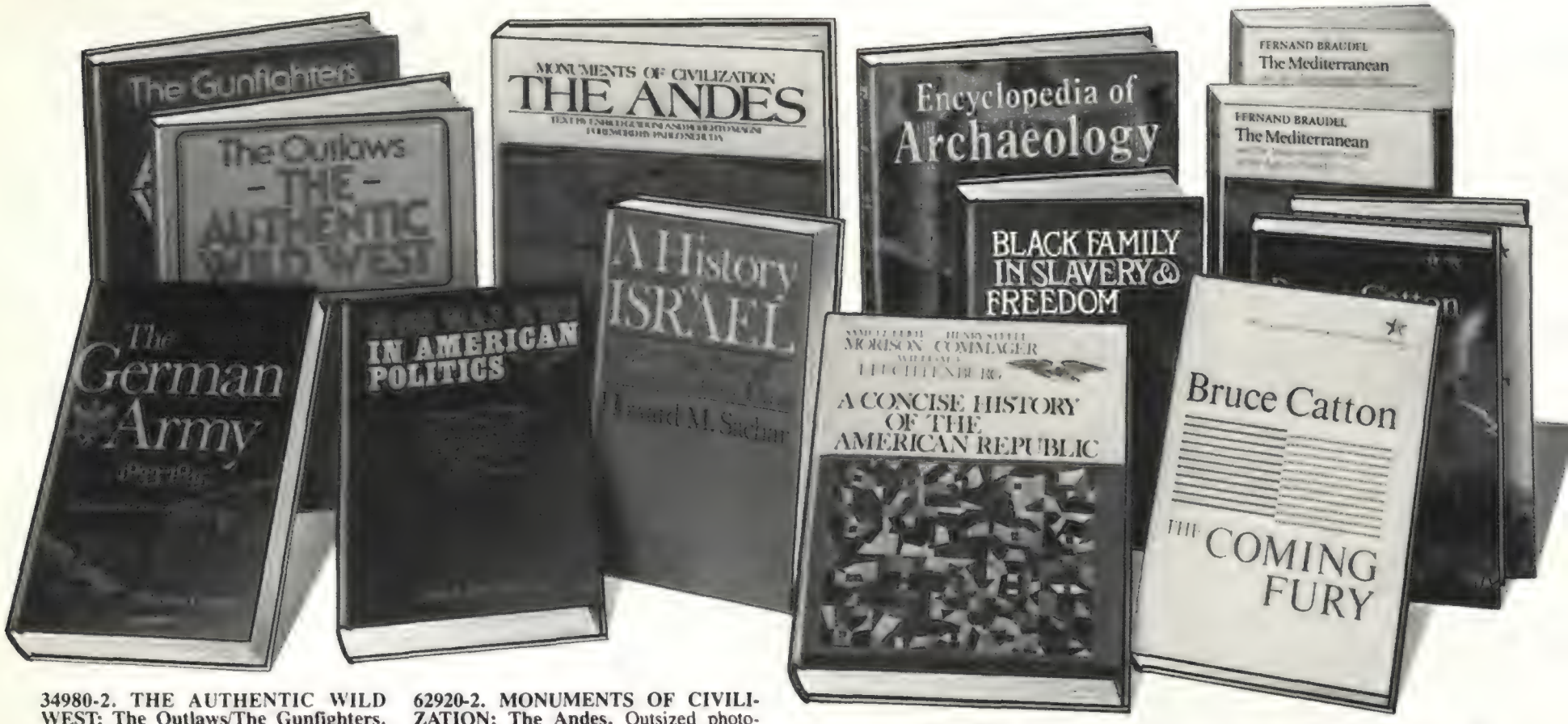

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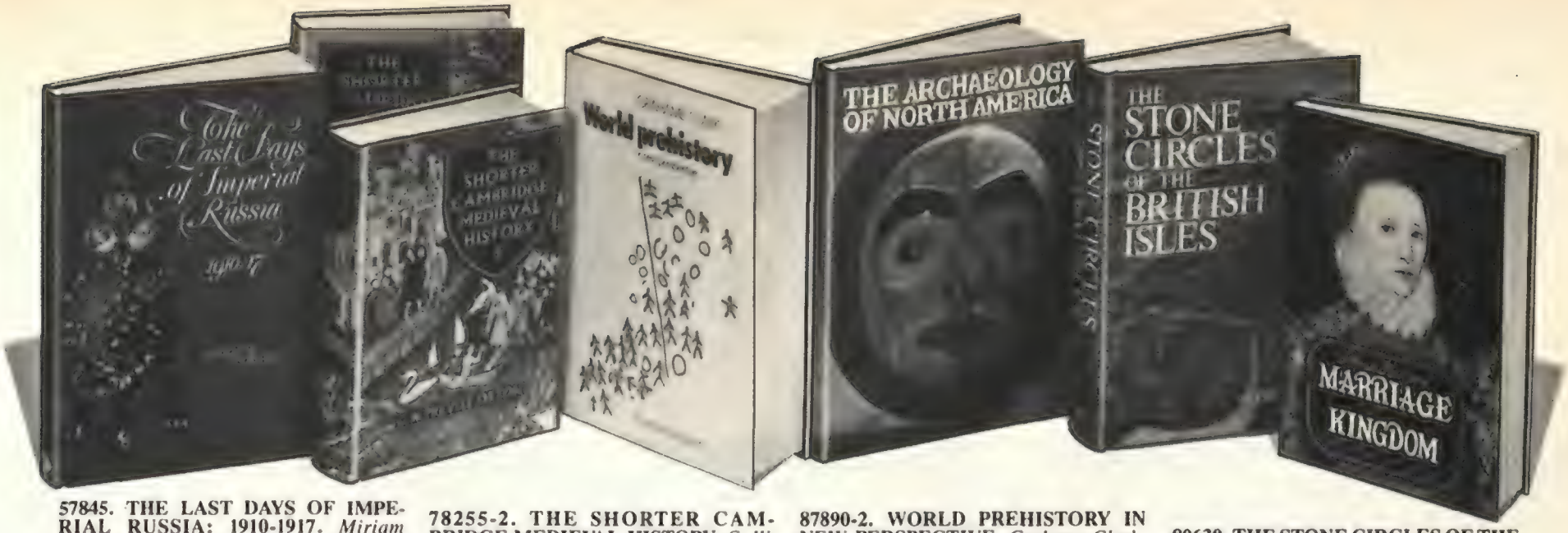
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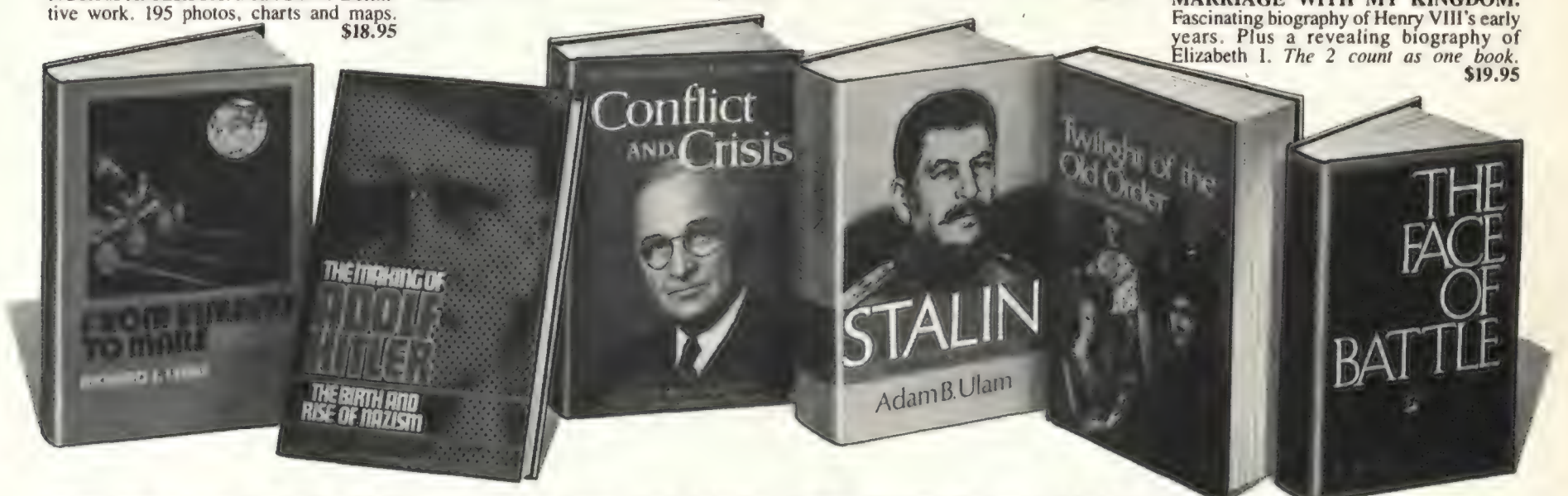

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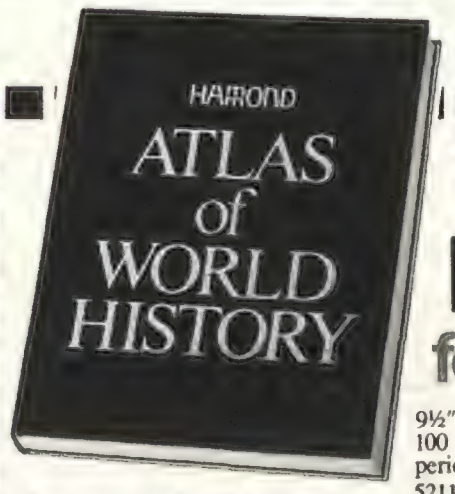

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At last there is a visual account
of the wanderings of the Jews

Tel Aviv's new museum of the Diaspora shows Israelis where they've been for 1,800 years and what seeds they've sown

By Robert Wernick

Photographs by Dmitri Kessel

It was Dr. Nahum Goldmann, founder-president of the World Jewish Congress, who first had the idea.

He had labored long and hard for the birth and development of a Jewish state in Palestine. Like most European Jews of his generation, he was proud of the youth growing up there, bold and self-confident in a land of its own. But he was disturbed, too, by what he felt was becoming a warped idea of the Jewish past.

For the muscular, self-assured Sabras, born to the sound of gunfire and victory celebrations, the history of their people began with King David, conqueror of the Philistines who gave their name to Palestine, conqueror, also, of the holy city of Jerusalem. This history went on for ten glorious and sanguinary centuries during which the Jews fought for survival against greedy neighbors and endured the clashings of the superpowers of those times, Egypt and Assyria, Babylonia and Persia, Macedonia and Rome. It came to an abrupt stop in A.D. 70, when the Roman legions of the Emperor-to-be Titus stormed the walls of Jerusalem, razed the Temple and separated the Jews from their holy city. Then came a long hiatus, a period of drifting in outer darkness, till light shone anew in 1947, when a national Jewish history was renewed with the warlike birth pangs of Israel.

More than 1,800 years are skipped over in this perspective, covered with what many feel is a veil of shame. Descendants of the Maccabees, mounting guard in Sinai or on the Golan Heights, do not like to be reminded of what they regard as submissive genera-

Diorama shows books of the Talmud carted to Notre Dame for burning after having been snatched from Jewish homes in Paris. Jews (left foreground) mourn this iniquity of 1242.

tions, living on the sufferance of foreigners in alien lands, often persecuted, perpetually in flight.

Such an attitude, thought Goldmann, meant abandoning a priceless heritage of the past. There was nothing shameful about those 18 centuries; they represent unique achievement. No other people, so torn from its roots and scattered, has maintained its identity, faith, customs, language and codes of conduct so virtually intact. Jewish creativity left its mark on all nations where the wanderers stopped to rest. Rather than forget this, Goldmann proposed, let us build a museum that will be a permanent reminder to young Israelis, as well as to all the world, of "the greatness and the creativity and, in its own fashion, the heroism" of what historians call the Diaspora (a Greek word meaning scattering, dispersion).

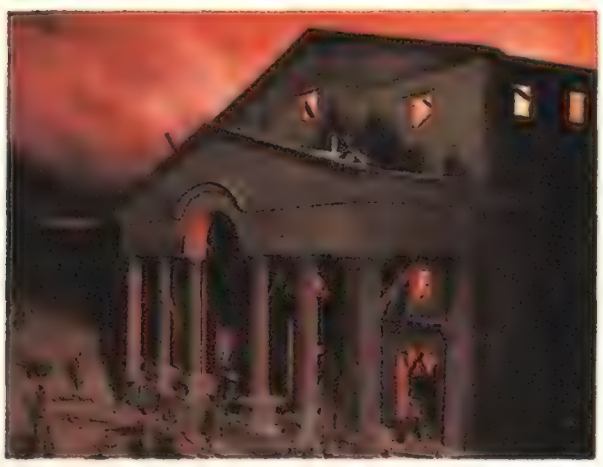
In 1959 the decision was made to build what would be called Beth Hatefutsoth, Museum of the Jewish Diaspora, in Tel Aviv. For a dozen years experts and learned men wrangled over the form such a museum could take. At last, in 1970, an overall plan was adopted, based on the ideas of an Israeli poet, Abba Kovner. Money was raised in Jewish communities throughout the world, with a relatively small sum coming from German war reparations. An international competition was held to choose an architectural plan, and the result is a concrete cube with a disconcerting resemblance to a World War II blockhouse. It stands on the campus of Tel Aviv University, and was opened officially last month.

It is easy to see why Beth Hatefutsoth was so long in coming into existence. It was designed to cover an endlessly varied life in scores of countries over centuries of change, from rich communities like those of Moslem Spain to miserable communities like those of Yemen, to lost communities like those of China. It had to cover migrations, persecutions, discoveries in sciences, dazzling achievements in the arts, life in villages, life in royal courts. A history of the Jews cannot help spilling over into a history of the world. And this museum was to be only four stories high.

The overwhelming scope of the material is equalled only by the paucity of physical remains. There are books aplenty, illustrations in old manuscripts, millions of documents. But the objects that ordinarily fill a museum's halls are now gone with the wind. Not a stone remains of the great synagogue of Greco-Roman Alexandria where worshipers clustered in such numbers that a flag had to be waved to those in the rear to let them know when to say Amen (below, left).

Of the rich community in the Roman province of Cyrenaica, today's Libya, little survives but a broken milestone with a fragmentary inscription re-

Robert Wernick's most recent contribution was his article on Montaillou in March 1978.



Alexandria's Great Synagogue, so vast that "Amens" were cued by a flag, burned during Jewish revolt against Rome, A.D. 115-117. This is a diorama.

Luzk Synagogue in Poland, modeled here, was built as a fortress 1580–1648. Underground passages led to Jewish homes for use in perilous times.

Model of Pradessi Synagogue recalls Jews of India, who built this richly furnished temple in Cochin while under Portuguese rule in 16th century.

cording the repair of a road destroyed during a Jewish insurrection. A few synagogues transformed into churches are all that recall the wealth and pride of Jews in Spain. The desert sands blow over the academies of Sura and Pumbedita in Babylonia, where rabbis once sat year-round settling questions of law. All the intense life of thousands of villages in Eastern Europe, which a couple of generations ago formed the largest Jewish community in the world, was snuffed out in less than a decade of barbaric Nazi efficiency.

To re-create these vanished worlds, the museum had to be built from the ground up, its exhibits made rather than collected. The final design is largely the work of James Gardner, an imaginative Englishman who specializes in creating museums built around ideas that are difficult to illustrate.

He has used modern audiovisual techniques—films, filmstrips, backlighted transparencies, projections. Visitors see films of Jewish life in modern out-of-the-way communities. They listen in Hebrew or in English translation to a debate over the principles of charity in a contemporary yeshiva (rabbinical school), or a discussion of current events between Jew and Greek in the harbor of first-century Alexandria. They see an animation tracing the travels of Benjamin of Tudela in the 12th century. They put questions to a computer and receive print-outs giving complete information about the composition and history of any of some 3,000 Jewish communities ranging from ancient Egypt to the modern Midwest.

All this makes for impressive displays. But there are other appealing aspects to the museum that are also more old-fashioned. These consist of scale models, diagrams, sculptured figures, mural paintings—the work of a team of modern artist-craftsmen reconstructing detailed scenes of Jewish life through the ages.

None of these was done in Israel. In any previous

Romans carry off the sacred menorah after razing the Temple of Jerusalem in A.D. 70 and so starting the Diaspora. Detail is from the Arch of Titus, here reproduced in fiber glass.

Kai Feng-Fu Synagogue was built in 1653 by Jews from Persia and India who settled in China but are now gone. Model is from 1851 sketches.

Frank Lloyd Wright designed Beth Shalom in Elkins Park, Pennsylvania. Model shows how glass walls lit the central hall of this Reform Synagogue.

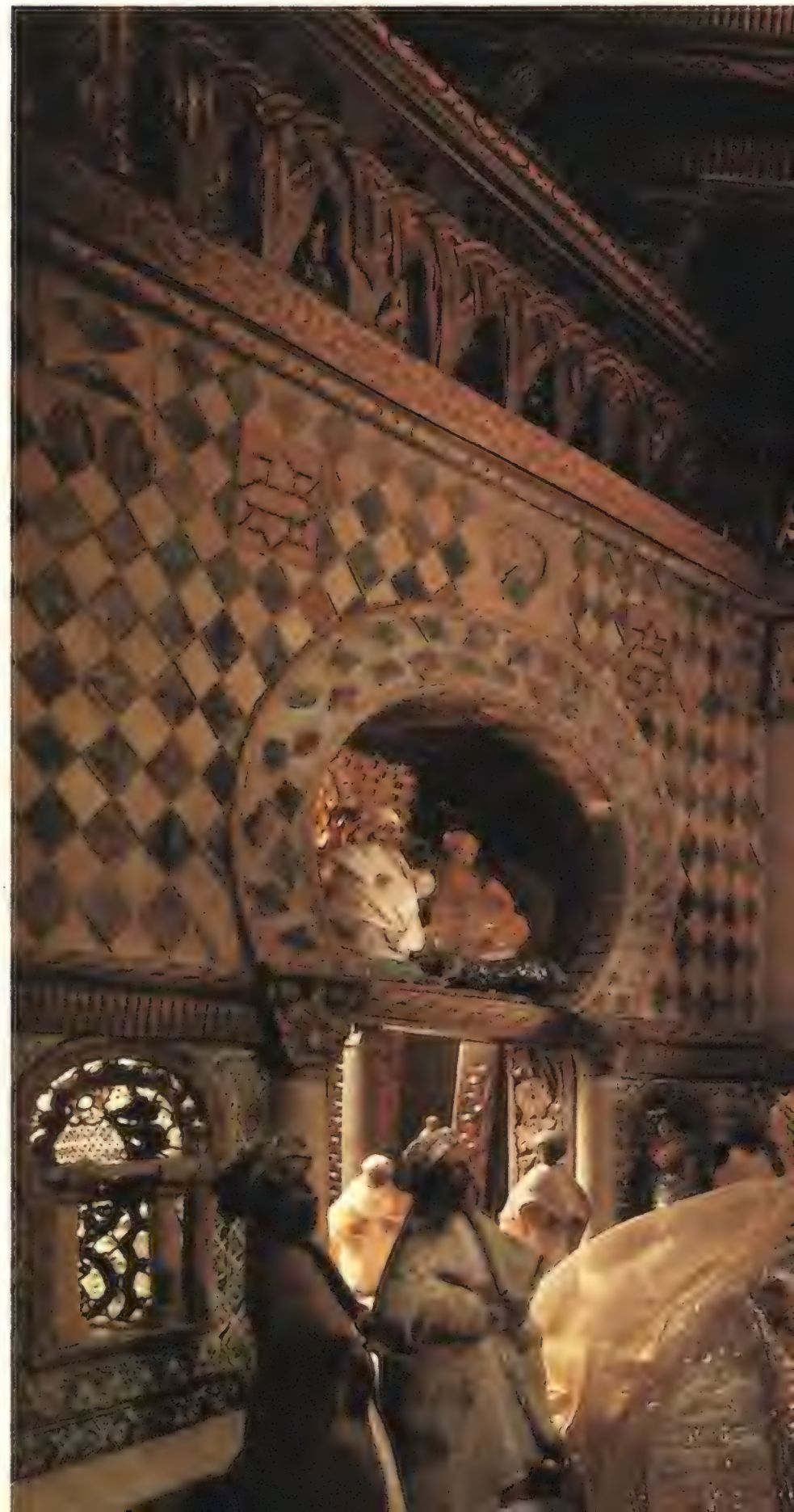
Beth Hatefutsoth Museum itself—in pill-box concrete—stands on the campus of Tel Aviv University on land leased from the University.

historic epoch, almost any Jewish community would have been able to provide skilled craftsmen for this kind of work. But Israel, although it has plenty of electronic technicians, has few craftsmen to take on the tedious, traditional and ill-paid chores of painting, carving or casting authentic replicas.

So the bulk of the work was done in London. Gardner recruited more than a score of artisans, including the woman who designs wax figures for Madame Tussaud's museum. Other work was done in New York.

It was not an easy job getting all this done correctly. This is a subject very close to the Israeli heart, and numerous academic authorities leaned over the shoulders of the designers of every exhibit, criticizing every minor detail. Knotty problems arose everywhere. What kind of hat would the exilarch of Babylonia have worn in the Sassanian period? How do you design a boat from a century which has left no surviving fragments of a boat to the archaeologists? If you are reproducing the blindfolded figure of Synagoga from the Strasbourg cathedral, do you use the restoration presently standing there and familiar to every tourist, or do you try to reproduce the 13th-century original, and if so, how can you be sure what the original looked like? The goal was representation of daily life in the past, so, for instance, the man who worked on the Arch of Titus had to add missing heads and limbs that would pass muster as truly Roman.

Serious and exhaustive research was necessary. The plans for the vanished synagogue of Kai Feng-Fu, whose congregation of Oriental Jews disappeared in the mass of China a century ago, had to be reconstructed from drawings made by Jesuit missionaries in the mid-19th century. The lovely ceiling paintings of the 17th-century wooden synagogue of Chodorov in Poland were consumed by German fire in World War II. Only black-and-white photographs survived,



Relief represents Rabbi Ashi teaching at the Sura Academy in Babylon, a city famous for schools where the Torah was studied. Sages sit in center, most noted in first row.

Kairouan, North Africa, was a center for Jews. Diorama shows 11th-century betrothal rite for Yehoseph, son of Samuel Ha-Nagid of Spain (cover), and daughter of Kairouan's rabbi.

Philippe Auguste of France, at left, expels Jews in 1182. They wear yellow circles on their clothing—a grim forerunner of Nazi horrors of some seven and a half centuries later.

but artists used these and bits of contemporaneous work to bring their scampering animals and green meadows back to life.

Sometimes a form had to be created for the occasion. There are few surviving bas-reliefs from Sassanian Babylonia, of the fourth to sixth centuries, so designers made some "good enough to be in the British Museum," says Gardner, "if they were authentic."

This is not fakery. The objects in Beth Hatefutsoth are unapologetically what they are: replicas, reproductions, reconstitutions. They are an attempt to blow life into the dry bones of the past, to make the visitor share the daily ebb and flow of life in the Diaspora.

The ground floor of the Museum has room for temporary exhibits, an auditorium, cafeteria, offices. The permanent exhibit starts after a walk up a concrete stairway into a wide, stone-paved gallery. Its entrance lies between two huge roughhewn blocks. They look immeasurably weighty, and when they were left in the driveway on delivery day a truck driver demanded a bulldozer to get them out of his way; then two Arab boys picked them up and carried them upstairs. They are fiber-glass replicas of stones that once formed part of the wall of the second Temple of Jerusalem.

This Temple was built by Zerubbabel after the return from the Babylonian captivity, and enlarged by King Herod the Great. When the Roman legionnaires of Titus stormed the city in the year A.D. 70, they were so enraged by the fanatic ferocity of the resistance that, recognizing the Temple as the center of their foes' existence, they smashed it to fragments leaving only the Western or Wailing Wall. Recent archeological digs have uncovered more of the Temple.

The fateful year is A.D. 70, from which the beginning of the Diaspora is generally dated. In point of fact, there were considerable Jewish communities abroad before then. On an island in the harbor of Alexandria 72 rabbis had earlier translated the Old Testament

into Greek. Colonies of Jewish farmers, merchants, artisans (like Saul of Tarsus, who became St. Paul and who was a tentmaker by trade) had spread through most of the cities of the Greco-Roman world.

However, until A.D. 70 the life of all these communities still evolved from Jerusalem, around the yearly procession of ceremonies and festivals at the Temple. Their laws and ways were fixed by the sages of Palestine who for centuries had been poring over and arguing about every syllable of the laws of Moses, written originally for a primitive rural population, continuously reinterpreted and readjusted for use in an increasingly complex civilization.

Jews held together by their Law

When the Temple was destroyed and the people scattered, logic would have dictated the death of Judaism. Instead, the rabbis went on reinterpreting the Law, replacing the physical Temple of Jerusalem with a spiritual one, weaving an immensely complex pattern of duties, prayers, observances, that all Jews were bound to follow from birth to death.

Single-minded, passionate loyalty to his Law would preserve the Jew's identity through all his wanderings. He might speak a variety of languages—Yiddish in Eastern Europe, Ladino in Spain and the Balkans, Judeo-Arabic in North Africa, Judeo-Persian in Afghanistan, Judeo-Tat in the Caucasus, even ancient Aramaic, the language of Jesus, in Persia—but he always prayed in Hebrew. In his daily business he might dress like an Englishman or a Chinese or whatever people among whom he lived, but at the appointed hour he put a prayer shawl around his shoulders and bound phylacteries to his left arm and head. He followed the law of the land, but in religion he deferred to the authority of rabbis, sometimes living thousands of miles away.

Beth Hatefutsoth displays a fragment of correspondence between the Jewish community of Sijilmassa in Morocco and the rabbis of Babylonia in the 11th century. The question is raised whether it is lawful to eat dead locusts and the answer comes, after due consideration of principles and precedents, that they may be eaten if they come out of a storage bin but not if they come out of a basket.

The Law guaranteed that the Jew would always be different from his neighbors. Distinctiveness inevitably insured him, as well, varying degrees of puzzlement, annoyance, sometimes blind hostility. A Christian bishop of Alexandria, in a letter shown in a vitrine on the third floor, was not the only man in history to be astounded and annoyed by the strict observance of the Jewish Sabbath:

"On our way from Cyrene to Alexandria, a great storm arose. The Jewish captain and sailors had secluded themselves to pray, leaving the ship to toss unattended on the raging billows because it was Sabbath eve, a time when they desist from work. Nor was the Jewish captain deterred by the anger of the passengers, one of whom brandished his sword over him." But the rabbis recognized that even divine commandments allowed for exceptions: when at midnight the high seas threatened to break up the ship, the captain consented to "seize the tiller and steer the ship, because danger to life offsets the Sabbath."

How such disparate individuals could still form a single people is the subject of three sections of the museum. Labeled Family, Community, Faith, these form a whole, illustrating the bonds of continuity in Jewish life. Every stage of the life cycle has its fixed patterns; birth, the circumcision of male infants on the eighth day (illustrated by Rembrandt drawings as well as by a plaster-figure group), the bar mitzvah which admits the 13-year-old boy to adult responsibilities in the congregation, marriage, death.

Each season of the year is marked by holy days, days of mourning like the Ninth of Ab when the Temple was destroyed, days of rejoicing like the Passover when the people were delivered from Egyptian bondage. A diorama reconstructs a Passover feast, a seder, in 14th-century Spain: the clothes and domestic architecture are different, but the songs and stories and wine are the same as in contemporary New York.

By choice or necessity, most Diaspora Jews have lived in constricted, tightly knit communities, inside which a whole gamut of institutions helps keep the traditional ways of life alive. The museum has a remarkably detailed model of a medieval German ghetto, with more than 100 little figures engaging for the most part in typically Jewish activities: studying in the Hebrew school, judging cases in the rabbinical court, thrashing out fine points of doctrine in the yeshiva, butchering animals in the ritual fashion which alone makes them proper to eat, soaking in ritual baths, organizing charities for the poorer members of the community, preparing the last rites for the dead.

Varying synagogues recall wanderings

There are models of 18 synagogues which are themselves a kind of roster of the Diaspora, passing through every style of architecture, from the classic columns of second-century Sardis in Asia Minor through the Moorish arches of Spain, the pagoda-roof of China, to the ultramodern design of Frank Lloyd Wright in a suburb of Philadelphia. The synagogue has always held an honored place in Jewish life, but the essence is not in the building but the congregation.

A plaster group by sculptor Astrid Zydower trans-

mits this feeling. It shows a prayer room in London where some shabbily dressed men have come together. Prayer in Judaism is a communal as well as a private matter; in public worship nothing can begin until a minyan, a group of at least ten males, has formed. The tenth man is just entering the door, the others are getting ready to open their tattered prayer books; one of them is helping an inexperienced boy to put on his phylacteries correctly.

Zydower was herself born in a Jewish family in Poland, but she was smuggled out of the country as an infant to escape the Nazi terror and was brought up as a Christian in England. Working on this commission filled her with a fascination for the ways of her fathers, and the sculptured group is bathed in a kind of serenity, to show that constant repetition of this ritual played a permanent and satisfying part in the lives of untold generations.

The museum illustrates how the Jewish communities of the Diaspora could maintain themselves and their values, isolated pockets in an alien and often hostile world. But the isolation was never total. No matter how narrow life could be, and behind ghetto walls in medieval Europe it could be fearfully stifling, there had to be contact between the Jews and the Gentiles among whom they lived. These interactions are taken up in the next two sections of the museum, labeled Culture and Among the Nations.

A central place in Among the Nations is occupied by one of the most dramatic and colorful of all the episodes of the Diaspora, the rise and fall of the Jewish community in Spain. For hundreds of years, under relatively tolerant Moslem rulers, the Jews lived a true golden age, spreading through all the life of the peninsula, rising to positions of power, amassing wealth, producing some of the most skillful physicians and the subtlest philosophers of the early Middle Ages.

Diorama of London's Whitehall shows Jews from Amsterdam seeking right to settle in

Two Jews especially are shown at the heights of power and glory:

Hasdai Ibn Shaprut, a tenth-century physician and diplomat, is seen in a series of painted panels. As adviser to the Caliph of Cordova, he negotiates with envoys from the German emperor. As head of the Jewish community, he dispenses justice, protects the oppressed, receives communications from the King of the Khazars, a Turkish people on the banks of the distant Volga who had converted to Judaism (and who, according to a theory recently revived by Arthur Koestler, may be the principal ancestors of most living European and American Jews). As private citizen, he converses with sages and poets in his garden.

Samuel Ha-Nagid, a couple of generations later,

Cromwell's Britain. Merchants protested, but Cromwell connived to admit them anyway.

rose from perfume vendor to chief minister of the King of Granada and commander of his Moslem armies. A diorama shows him sitting in his tent on the eve of a battle, composing a poem of farewell to his son (cover).

The picture darkens as the Christians drive remorselessly southward in their reconquest of Spain. The Moslems turn fanatic in the hour of defeat. The new rulers at first tolerate the Jews, but are determined to convert them. In a diorama, with a connected sound track in Hebrew and English, we can watch and listen to a debate held at the court of a king of Aragon in 1263 between Nahmanides, a Jewish scholar, and a Catholic monk, himself an apostate Jew. Such disputations were common enough at medieval courts; since Christians set the ground rules and also acted as judges, the choice of winner was never in doubt.

Another diorama shows the Dominican friar Saint Vicente Ferrer breaking into a synagogue and demanding the conversion of all Jews to the faith of Christ. Still another shows the last baleful act of the drama. King Ferdinand and Queen Isabella listen to the pleas of Jewish leaders against the decree of expulsion from Spain. But Torquemada, the Grand Inquisitor (who was rumored to be of Jewish ancestry, as was King Ferdinand), holds up a crucifix and hardens the hearts of the rulers: the Jews must abjure their religion or leave the kingdom.

The result, as texts along the wall inform us, was that thousands of Jews perished at sea, thousands were taken by pirates and sold into slavery, thousands remained behind as more or less sincere converts. But thousands more made their way to Protestant Holland and Ottoman Turkey, both implacable foes of Spain.

Settlement, expulsion, disaster, recovery

Subsequent scenes show the Jewish exiles bringing their knowledge and their industry to the aid of their new hosts. With their talents for finance they help found the Amsterdam Stock Exchange, they branch out into diamond-cutting and making optical instruments, and they help the Dutch become the dominant commercial nation in Europe. In Turkey they make superior guns and uniforms for the armies of the sultan and rise to key positions in the government, until in the course of time the Ottoman Empire decays, intolerance toward minorities rises and the rich Jewish communities suffer.

History in the Diaspora is, as a text on one wall puts it, "a continuous drama of settlement and expulsion, disaster, and recovery." Life is always uncertain. Prosperity gives way to persecution. The Jews are welcomed to the courts of Western Europe in the early Middle Ages to help enrich the lands with their commercial acumen. Later they are slaughtered by fanatical Crusaders on charges of having caused the Black Death; they are forced to wear yellow badges of shame; they are restricted to professions like moneylending and pawnbroking which the Church forbids to Christians. They are invited to Eastern Europe by the princes of Poland and Lithuania to serve as middlemen between them and their peasant subjects, to be barbers, butchers, doctors, furriers, shoemakers, weavers, goldsmiths. Eventually both princes and peasants will make them victims of merciless pograms.

Throughout all the wanderings, a dream remained constant, the hope for a return to Zion. Throughout the Diaspora false Messiahs periodically arose claiming to have been sent by God to lead his people back

Jewish quarter of Lublin, shown in this diorama, captures 17th-century life in Poland, then the richest center of Jewish world.

Cartoon in museum's cultural section shows Baron Rothschild driving his matched zebras.

to the promised land. Only at the end of the 19th century did a practical plan for the restoration of a Jewish state in Palestine emerge. A section of the museum, called Return, documents the formation of the Zionist movement, the flow of immigration, and the proclamation of the new state.

In every generation a certain percentage of the Diaspora population has slipped away from its past, has been completely assimilated in the Gentile world, like the congregation of Kai Feng-Fu. Others, without losing their Jewish identity, have made their mark in and sometimes profoundly transformed the general life of their times. And so we have a gallery of scores of great or interesting or merely odd personalities, children of the Diaspora who became internationally famous: Spinoza; Heine; Jonas Salk; Levi Strauss, who introduced blue jeans to the American cowboy; Sidney Franklin, the Brooklyn matador, victor over 5,000 bulls; the Rothschilds; Modigliani; Saul Bellow.

Outsiders looking in at this singular people often

Another cartoon depicts Jewish gauchos posing beside a team in Argentina . . .

. . . and this shows Levi Strauss and his product. These are by Israeli cartoonist Danny Kerman.

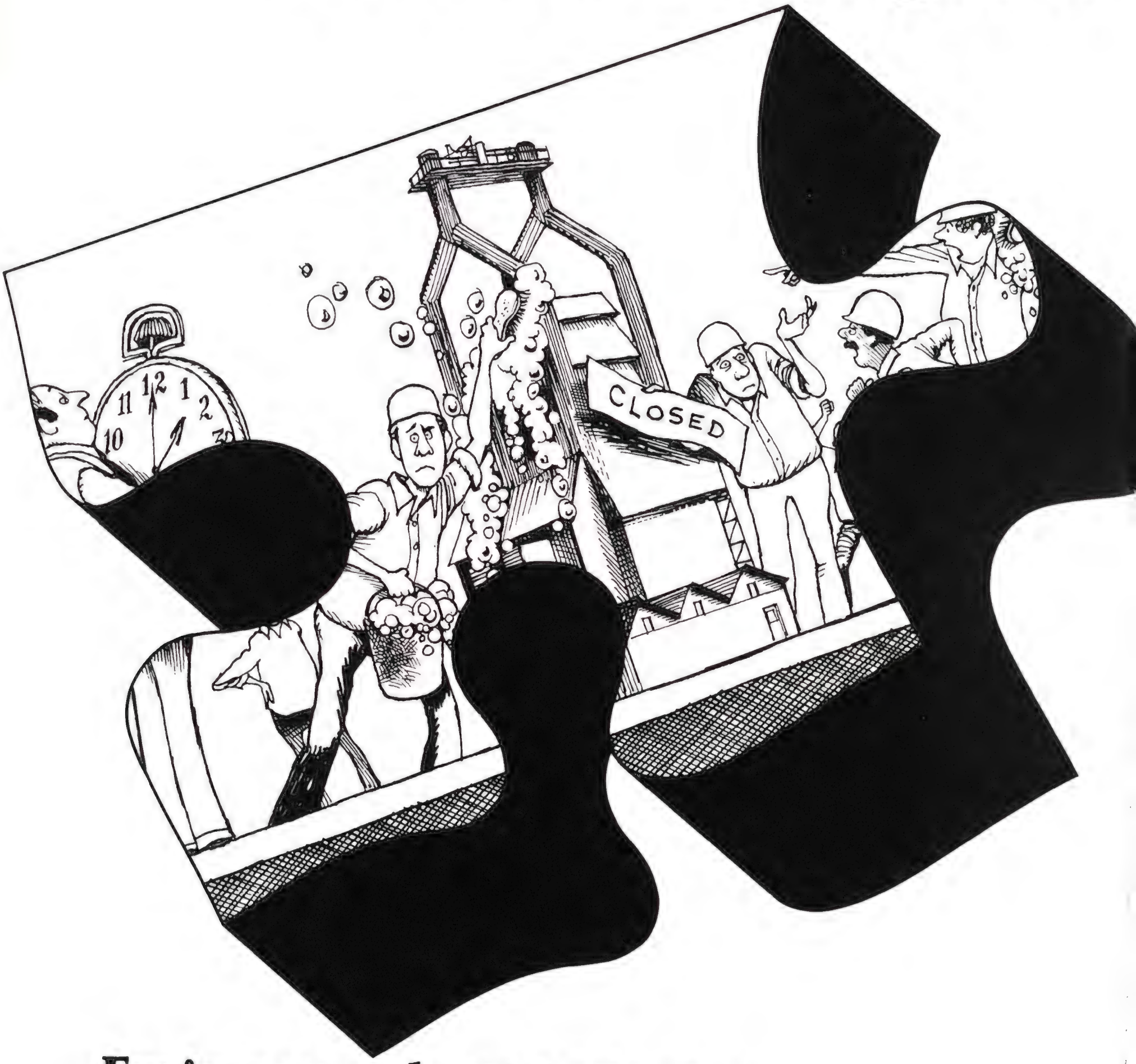
tended to form a single stereotype, like the hook-nosed moneylender of anti-Semitic cartoons. Actually, the Jew of the Diaspora might be anything: farmer, trader, shopkeeper, craftsman, silversmith for the Yemenites, gunsmith for the Turks, slave trader for the Kings of Bohemia, lion tamer for the Kings of Aragon, physician, philosopher, prizefighter. His physical traits might vary as much as his choice of trades.

This spectrum is richly illustrated in a display where lights are continually flashing in the darkness as 16 screens project photographic galleries of Jewish faces (below) throughout the contemporary world. There are some 200 in all—blond Jews and black Jews, sturdy mountaineers and gentle scholars, a vast array of facial characteristics, a cross section of Mankind.

Beth Hatefutsoth is intended to be a record of achievement, and its prevailing tone is one of victory over recurring difficulties. But there are continual reminders that the great victories are balanced by great disasters, that a recurring theme of Jewish history has been woe. The visitor walking up from floor to floor climbs a circular stairwell in which there hangs from the ceiling a cagelike iron structure 50 feet high designed by Charles Forberg of New York. An eerie light in the center and solemn music help identify this as a Memorial Column, commemorating centuries of martyrdom. At its foot are "Scrolls of Fire"—illuminated poems recording the great tragedies that have befallen the Jews from 586 B.C., when Nebuchadnezzar destroyed the first Temple, King Solomon's Temple, and took the people captive to Babylon, down to the Hitlerian holocaust of 1939-45. The scope of the museum does not concentrate on the horror of those recent years because it has been covered elsewhere.

Outside the building, the visitor steps back into the peaceful university campus. Students are sunning on the grass between courses. The exiles are safely at home. But it takes no more than the distant whine of a jet engine to recall that the final chapter is not yet written, the story has no guarantee of a happy ending.

Less rigid environmental standards save steelworker jobs... environmental goals.



Environmental common sense:
part of the solution to the steel industry puzzle.

mandates can without forsaking

The job of controlling air and water pollution in the steel industry is a tough one. And the costs are inordinately high.

So far, Bethlehem has spent about $550 million for hardware to clean up pollutants from the air and water we use. In addition, it costs us about $75 million a year to operate and maintain these control facilities, including the cost of valuable energy.

We're proud of what we have accomplished. Today we have in place or in progress facilities and plans designed to effectively control the major sources of pollution at our operations.

But federal and state governments want us to do more.

The road gets rockier—and costlier

In order to comply with existing regulations, it is estimated that Bethlehem must spend about $500 million *more* for environmental control. Grand total: more than *$1 billion.* Our operating and maintenance costs will also increase as more control facilities are installed and as energy costs rise. *We have no clear estimate of what the ultimate tab will be. Nor does anyone else.*

Based on the scientific data available, we question the stringency of many of the mandates we currently face. In some cases, proven technology does not exist to do the job. It takes time and money to develop control mechanisms that will be effective. In other cases, it is simply not feasible to do what needs to be done to meet the required deadlines.

Jobs are at stake

Bethlehem is now spending 25% of its capital funds for environmental controls. During the next five years, we expect this will increase to about 30%. Such capital investments do *not* produce income, but *do* increase the cost of making steel.

Expenditures like these erode the dollars we need to improve production facilities and provide job opportunities.

We are not crying "wolf"

Last year Bethlehem shut down certain facilities at our Johnstown and Lackawanna plants and laid off thousands of employees. That action was painful but necessary. Continued efforts to restore the profitability of these operations could not be justified—not when we included the huge expenditures for pollution controls that would have been required to continue operation of those facilities.

Action needed now

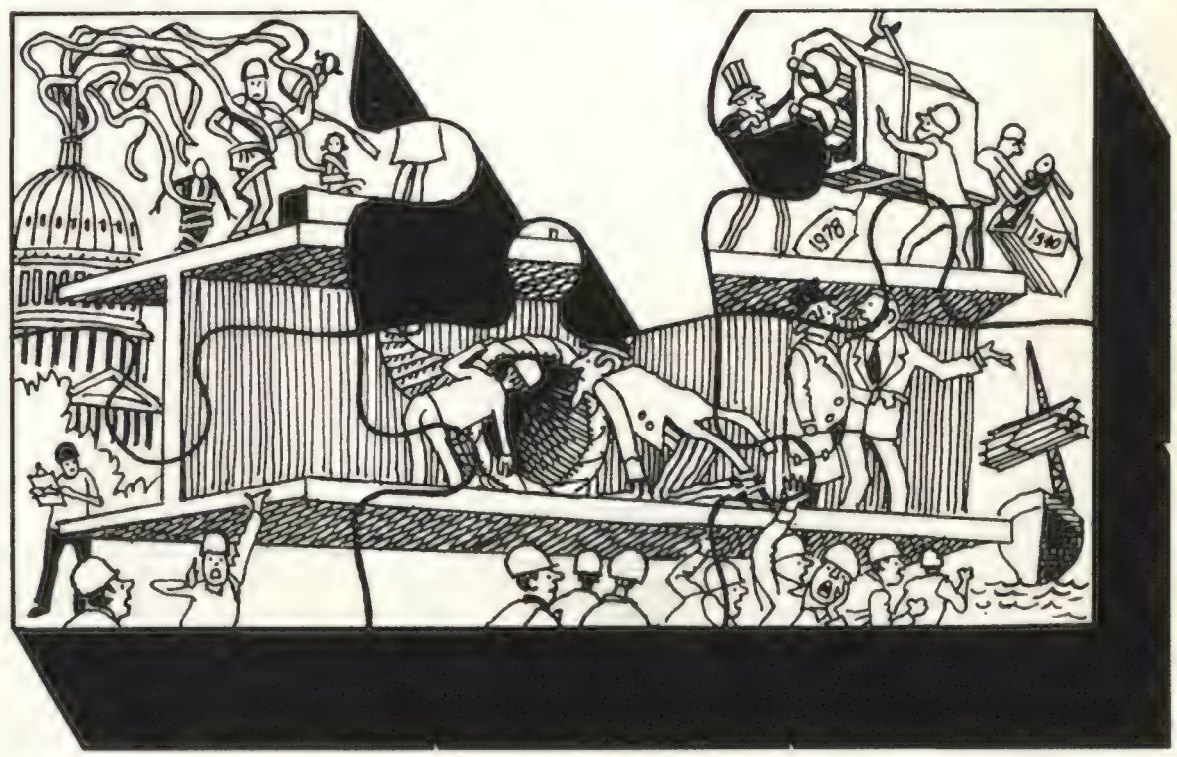
We support our nation's goals for clean air and water. And we endorse the recommendation of President Carter's Inter-Agency Task Force on Steel that calls for a review of EPA standards and regulations to provide more flexibility and to reduce barriers to steel industry modernization.

We also support the following: (1) rational enforcement of environmental laws and regulations; (2) greater flexibility in compliance timetables; (3) accurate determination of significant sources of pollution, their effect on public health, and the most cost-effective control techniques; (4) amortization of expenditures for pollution control facilities, including buildings, over any period selected by the taxpayer, including immediate write-off in the year the funds are expended.

Make your views known where they count

We believe a more reasonable balance between jobs and environmental cleanup is urgently needed. If you agree, tell that to your representatives in Washington and your state capital.

Bethlehem Steel Corporation, Bethlehem, PA 18016.



Bethlehem BETHLEHEM STEEL

In search of solutions.

By Russell Lynes

National Gallery's new building is triangular triumph

I. M. Pei's imaginative accommodation to a 'wacky piece of land' has added a building of lyrical grace to Washington

The new east wing of the National Gallery of Art is a building as struttingly 20th century in its design and concept as most official modern structures seem reluctant escapees from the 19th century.

What I. M. Pei, its architect, had drawn some years ago with a red ball-point pen on the back of an envelope—two triangles, one an isosceles and the other a right triangle—has now become, fitted together, the Gallery's striking and extraordinary new East Building and Center for Advanced Study in the Visual Arts.

Innumerable lines were drawn subsequently by Pei and his associates, but it was the initially simple juxtaposition of triangles that J. Carter Brown, director of the Gallery, characterized as "the most important single lines of all."

"Pei," Brown went on to say, "had to cope with a wacky piece of land, as uncompromising a ground plan as any architect has ever been saddled with."

What now stands on this ill-folded napkin of ground, where Pennsylvania Avenue and Madison Drive meet to form a trapezoid that is looked down upon by the Capitol, is a structure as unconventional as it is elegant. It is made of the finest of materials put

The vaulted central lobby, a great well of luminous space, is roofed by sky frame of cellular, triangulated subsections, from which hangs overwhelming Calder mobile. Miró tapestry *Femme*, center right.

Photographs by Robert C. Lautman and Dennis Brack

together with craftsmanship of very uncommon refinement, a building that seems to move as one walks past it, a museum as thoroughly "mod" as its mother museum is *grande dame*.

Some weeks before the building opened, I walked through it with Pei, a man of about 60 with a long string of beautiful and adventurous structures behind him and the promise of many ahead.

As we came into the main courtyard, I asked him, "Aren't you worried about the tremendous crowds that will jam in here as soon as the building opens?" "No," he replied, "it's designed for a mob scene. We needed to make the visit a pleasant one so we built a circus. You've noticed that the great halls of museums (like the Metropolitan in New York) that were once considered extravagant spaces are now filled."

The light that filters down on the tops of the trees and the sculpture and the "mob" is just half of the light outdoors. It shines through glass and slats of aluminum which cast shadows on the courtyard wall that look like the shadows from bamboo shades. I mentioned this.

"We tried a lot of different kinds of louvers, and we decided we couldn't improve on bamboo, so we used the nearest thing. Carter wanted the light cut by 50 percent to protect the works of art from glare."

We walked up the staircase to the escalators. "Every museum should have a grand staircase," Pei said. "This one is also practical. The fresh air comes in up there [he pointed to the tops of the walls where they meet the skylight] and it goes out here." He put his hand under the lip of one of the treads to show where the vents are located.

A few minutes later we came to the bottom of a stairwell in one of the corner towers. A creeping fig was climbing its walls from a carpet of greenery and woodland flowers. "People don't mind climbing stairs if they're nice looking," he said. They were, indeed, an invitation to climb.

From the top of the stairs we walked to a space where, Pei said, "We hope the staff and the public will meet here." It is a sharply pointed, triangular area with a glass wall that looks out on the Mall toward the National Air and Space Museum, and it can be reached from the Study Center as well as from the courtyard escalators or the bridge that spans the open spaces over the central courtyard.

The Study Center (which will not be in full operation for another year or so) opens on a seven-story courtyard at the bottom of which is a "reading room."

Architect Pei, Gallery director Brown, benefactor Mellon in discussion as new wing neared completion.

Along one side is the card catalog of the library, which is planned for 350,000 volumes; on the floor below will be a photographic archive, which already contains nearly a million items, and, eventually, a computerized art information bank. (These facilities, supplemented by the Library of Congress a few blocks away, should be bait enough to attract any scholar, though at the beginning there will be only ten in residence at a time, in addition to the scholars on the gallery's curatorial staff.)

Up one wall of the seven-story court are the bookstacks, up another are offices for the staff of the museum, and up a third side, which faces the Capitol through a vast sheet of glass, are the offices for the scholars and the administrative officers. Also on this floor are the boardroom and an executive dining room, both of which look out on a terrace partly bounded by marble-coated walls, partly by glass and partly by views between the elements of the building. The terrace is set about with crab apple trees. And the effect is like the square of a small Italian hill town. "It looks something like a de Chirico," Pei said. It does.

One of the charms of the building is that almost anywhere in it or within a few feet is a view of the outdoors or a view into the great courtyard. It thus avoids any sense of trapping its occupants within, and yet its spaces are never allowed to lose their intrinsic shapes. I first saw the building from the Capitol side, and as I walked past it, it seemed to move, to dissolve from one kind of shape to another, like a piece of sculpture. I mentioned this to Pei.

"There's an explanation for that," he said. "Unlike rectangles, triangles have an added vanishing point, so the eye keeps adjusting to different perspectives."

In the 37 years since the National Gallery, which was designed by John Russell Pope, made its debut dressed in its starched and well-bred cloak of pink Tennessee marble, the dignified lady gradually grew unable to keep up with what came to be expected of her. If she has maintained her Edwardian Beaux-Arts elegance, she lacks the flexibility that modern museums are called upon to possess (she boasted 156 works of art then; now she has more than 40,000). Museums want to give more of themselves today; the public wants more from them for itself.

When Andrew W. Mellon, who had been Secretary of the Treasury and our Ambassador to the Court of St. James's, gave the funds to build the National Gallery and his remarkable collection to put in it, he could not have foreseen the changes that would revolutionize such institutions. He did, however, have the

Cultural historian and critic Russell Lynes has a special interest in architecture, last wrote about the World Trade Center, issue of January 1978.

I. M. Pei's work embodies the useful and the visionary: "We needed to make the visit a pleasant one. . . ."

National Gallery's East Building

At mezzanine level, handling of marble is as delicate as light which brushes it. Sculpture is by James Rosati.

prescience to acquire land to allow for the ultimate expansion of the museum he founded on the condition it would not be named for him. The land he acquired was a parcel of nearly nine acres to the east of the museum, with the Mall on its south and its eastern edge facing diagonally what is now the reflecting pool in front of the Capitol.

When looked down on from above, Pei's triangles make a blunt wedge. When looked at from the inside of the central court that joins them, they enclose a pleasure dome with a man-made glass and aluminum sky of triangles in which a tremendous black, red and blue Calder mobile seems to have been let loose to float at will.

It was enlightening to look at these triangles with the three men most responsible for their design and planning—the architect, the director of the museum, and David W. Scott, under whose eye the day-by-day evolution of the building took place. Each led me through the building separately, each spoke in his personal terms from his special concerns, and each spoke with the pride of creation.

Carter Brown is a man in his early forties who talks about art with the fluency of a sportscaster, the enthusiasm of a deepwater yachtsman (which he is) and the ardor of a missionary. His head is filled with wonder at the creative spirit, his vocabulary with superlatives and his conversation with metaphors. We walked from his office in the "old" gallery (which in the future will be known as the "West Building") down its spacious and dignified central corridor to the east end of the building. There we came to a semicircular balcony from which we looked at the facade of the new wing through a wide glass door surmounted by a glass panel.

"The view from this Romeo and Juliet balcony," Brown said, "orients the visitor to the new building. He can go down these beautiful Renaissance stairs and out that door onto the plaza, or he can go down another flight to the level below ground and enter through the café."

"Orient" in this case means exactly what it says—look to the east at the west front of the Pei wing with its essentially symmetrical facade, accented by a very large sculpture by Henry Moore. Between the old building and the new is a plaza from which sprout seven differently sized tetrahedrons of glass, as though they had been pushed up from the ground they sit on. They look rather like "minimal" sculpture, but they are, in fact, skylights to illuminate the café and buffet below them.

We went down a flight of stairs to a wide but low-ceilinged area (low, that is, in comparison with the towering ceilings of the building we had just left) with posters and reproductions down one wall and a long book and postcard display down the other.

"This leads you into the restaurant area," Brown said, "which isn't like the old one. There are three stations with different kinds of food . . . or you can sit down and be served. It can handle seven hundred at a time."

Painstaking, award-winning craftsmanship is evident in the interior detailing as well as on exterior of the complex. Escalator is framed by cut in wall of pink Tennessee marble—a sonata of curves and angles.

The sit-down, or café, section is bordered on one side by a boxed hedge to set it apart from the buffet and on the other by a very large plate-glass wall nearly 40 feet long with a waterfall behind it. The water bubbles and glistens as it tumbles diagonally over rough-cut stones laid in narrow steps, and it makes a pleasant, unobtrusive and refreshing sound.

From the café we walked into a tunnel which goes under Fourth Street to the new wing, a tunnel whose walls and ceiling are striped lengthwise with narrow bands of shining metal which emphasize the perspective and distance dramatically. On one side of the 172-foot-long tunnel are moving sidewalks, illuminated dimly but adequately by lights in tubular stanchions.

We emerged from the tunnel on the floor below ground level, where large special exhibitions will be shown and where there are two auditoriums. One is for lectures and films and other devices for interpreting the arts, and is wired with a sophisticated sound system. In addition to the usual projection booth, there is a glassed-in area for translators. The auditorium seats about 400. The other is smaller and is for films and talks concerning the special exhibitions it adjoins.

The area for special exhibitions, when I saw it, was a forest of two-by-fours, the framing for temporary galleries that now hold an exhibition of some 700 objects (paintings, sculpture, jewels, porcelains, armor and so on) called "The Splendor of Dresden: Five Centuries of Art Collecting," an exhibition from the German Democratic Republic (pp. 56-61). "This is a wonderfully flexible space," Brown said. "It can be adapted to anything we want to put in it. This will be a thrilling show."

We walked up a broad flight of shallow steps to the "orientation courtyard" over which the Calder floats. We did not pause there. Brown took me outdoors to the entrance on Fourth Street so that I could see what it would be like to approach the building as most people do.

There are five gentle steps up to the level of the revolving doors that pierce a glass wall set back from the marble-sheathed facade. "Museum fatigue," which Brown insists is psychological (he's wrong . . . but then he's young), does not begin to set in, as it is inclined to in older museums by the time you have climbed the marble steps to the front door.

National Gallery's East Building

One of six shows which opened new wing is of small French Impressionist and Post-Impressionist paintings

Paul Matisse (Henri's grandson) installs the Calder mobile as his son, Robin, pays close attention.

The courtyard bursts on one like a contained explosion of light and air, a sensation that visitors to the Crystal Palace in London must have experienced in 1851, complete with indoor trees, flying colors and all.

The courtyard is not the new National Gallery. The museum is in the three towers at the angles of the isosceles triangle. Brown calls them "house museums."

"I've always liked small, intimate museums like the Phillips and the Freer here in Washington and the Jacquemart André in Paris," he said. "The idea of the house museum has been in the concept of this building since the very beginning."

He took me into the first floor of the one of these three-story museums in the angles of the main triangle, in which there is currently an exhibition of drawings and watercolors—one of six special exhibitions to celebrate the opening of the new wing. The basic shape of the gallery, which is an octagon fitted into a parallelogram, had been divided into a number of small rooms of irregular shape.

On the same level with the drawings is a show of "Small French Paintings from the Ailsa Mellon Bruce Collection," and on our way to the galleries that were being prepared for them, we walked by a large glass wall outside of which was a shallow pool over a carpet of marble.

"There will be three David Smith sculptures on islands, some yew bushes on other islands here, and a large piece of abstract sculpture by Alexander Liberman," Brown said. "We're borrowing it from the Storm King Museum."

The other exhibitions in the house museums and

left to the Gallery by the late Ailsa Mellon Bruce, daughter of the Gallery's founder, Andrew W. Mellon.

North face, with Alexander Liberman's *Adam*. Federal Trade Commission building is straight ahead.

the long galleries that join them (and which are divided up for coziness into small galleries) are a show of Piranesi drawings and engravings, one of "Aspects of Twentieth Century Art" from the museum's collection and from the collections of particular friends of the museum, and a show of "American Art at Mid-Century" by seven artists, just the ones you would expect: David Smith, Arshile Gorky, Willem de Kooning, Barnett Newman, Mark Rothko, Jackson Pollock and Robert Motherwell.

Pei's grand staircase leads to the second level above ground, from which an escalator rises to a bridge that spans the great open space. From the bridge one looks across the courtyard through the two levels of "leaves" of the vast Calder to a very large, handsome, black-on-white painting (31 feet long) by Robert Motherwell, one of his *Spanish Republic* series.

The Calder, the biggest mobile he ever made, was first constructed from his small scale model at his studio in France. It weighed approximately 5,000 pounds in steel and the gallery worried that it wouldn't move in the air currents. Paul Matisse (grandson of Henri) solved the problem by remaking it in aluminum. When he was finished it weighed 920 pounds. It is moved slowly by the currents of air inside the building.

Carter Brown then led me to the other triangle of the building, the Study Center, where high thoughts will be thought, scholarly research carried out, and policies made and argued.

In some respects David Scott has been closer to the building than anyone at the gallery, watching it

View from east corner of main court: Noguchi's *Great Rock of Inner Seeking*, left; Miró tapestry on wall.

West entrance of new wing as seen from main gallery building. Skylights are over underground café.

at every step forward and every subtle alteration, through delays from strikes, shortages of material, and changes of mind.

"The way this project has developed, it would have been possible to build it only with private funds," he said to me.

The new wing is entirely the gift of the Mellon family—Paul Mellon; his sister, Ailsa Mellon Bruce, who died when the building was well along; and the Andrew W. Mellon Foundation, which they jointly founded. Paul Mellon is President of the National Gallery, whose board is almost uniquely small in size and large in financial muscle. The total cost of the wing is $94.4 million (for those who like to boggle at building costs, approximately $137 per square foot).

The first model that Pei submitted to the building committee was made of transparent plastic. "If you make a solid model or elevation drawings, the committee holds you to the facade, and if you change it, they are upset," Scott said. "Pei sold the concept with this model, and the building evolved from there."

The evolution demanded not only the most exacting kinds of craftsmanship but, as Scott explained, "the sculptural forms of the building made very high demands on technology and engineering. In some cases we had to develop our own technology." They were challenges that were admirably met.

Hanging the marble sheathing (the same marble from the same quarry as that of the old building) was one such problem. It is hung on brackets set in the concrete and brick, and there is no mortar. The slabs are sealed with flexible neoprene so that each slab expands and contracts in its own field. Details such as laying the paving stones in triangles instead of squares took the most delicate handling. Their points were fragile and they had to be laid so that they were "not an eighth of an inch off in 200 feet." Scott gave me a clipping from a local paper about a dozen craftsmen who had received awards from the Washington Building Congress for their meticulous and often inventive work on the building.

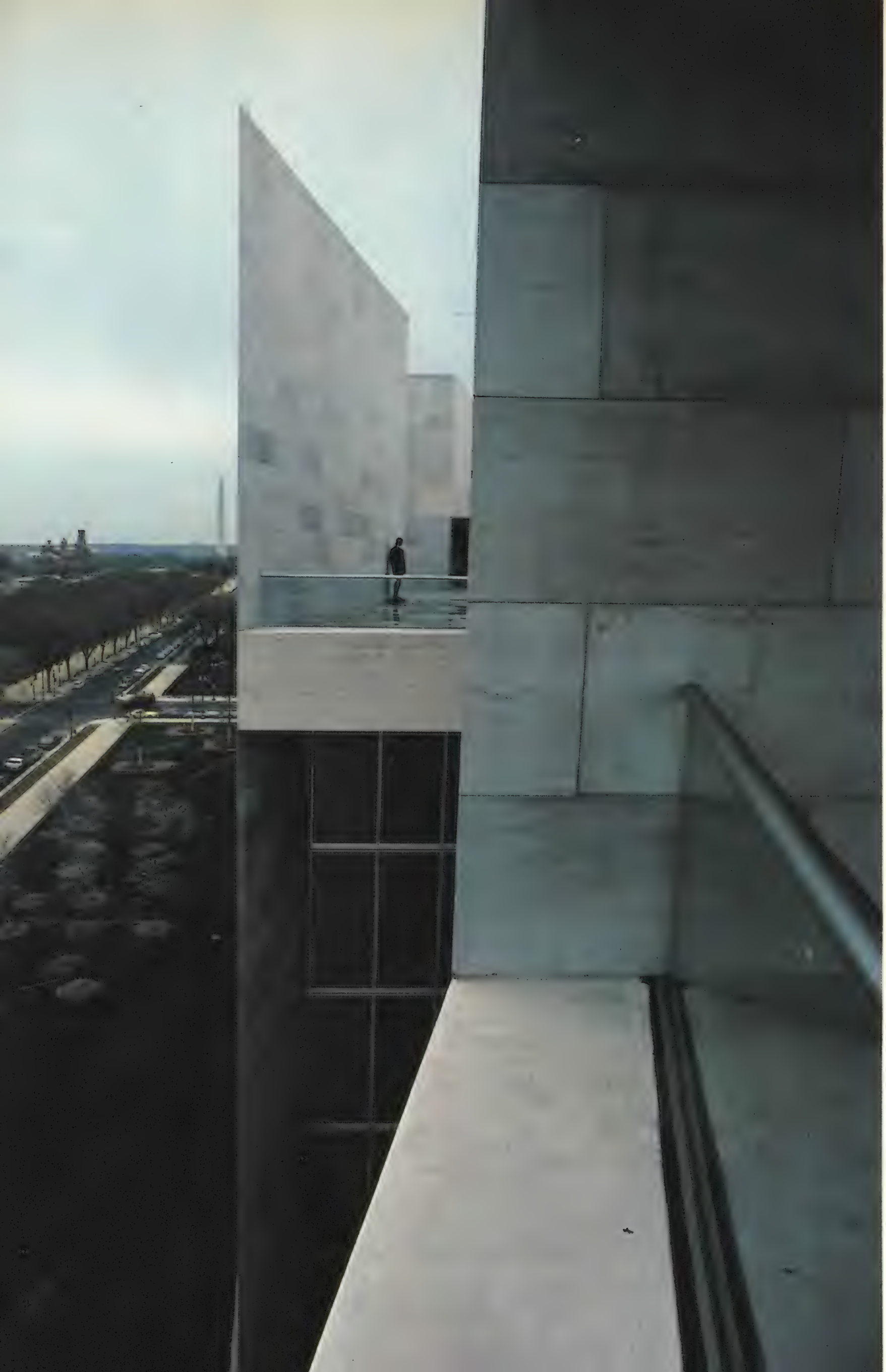
When the National Gallery opened in 1941, the architectural pundits of the time, steeped in the Bauhaus doctrines of functionalism, sneered at what they called its "drawing-board," Beaux-Arts, anachronistic extravagance. Now this building is looked on by a generation that has grown tired of functionalism, and has taken Art Nouveau and Art Deco to its bosom, as a masterpiece of a style which seemed to die with it 40 years ago. Now they regard it as beautiful, as a superb example of what it was intended to be, and cherish it as a permanent reminder of a way of life, of grandeur, and of expectations of permanency which the architecture of the decades that followed it seemed to sneer at.

Some of these same admirers are accusing the new wing of the sins the pundits once applied to the old building. One critic said to me, "It's graphic design architecture, based on minimal sculpture. If you like minimal sculpture, you'll like this."

The old building and the new one are, together, as tidy a demonstration of the changes to which museums have been subjected from within and without as can be found anywhere. The old building is condescending, an example of *noblesse oblige* which seems to say, "Here you are in the presence of art. Mind your manners and you can take away our treasures with your eyes, if you can appreciate them." The new building, on the contrary, says, "Come let me help you discover what is here for your pleasure and delight and enrichment, and I'll show you how to make the most of it." It is the difference between "Respect!" and "Enjoy!"

Mr. Pope would be as surprised to find his Beaux-Arts concepts joined in amiable concert with Mr. Pei's "modern" as Mr. Pei 40 years ago would have been surprised to find himself a happy and respectful neighbor of Mr. Pope's "anachronism." Time, it seems likely, will conclude that both have added immeasurably to the dignity of Washington, and the buildings will be bracketed by architectural historians, who like to wrap buildings in academic packages, as excellent examples of "20th-Century Federal Transitional."

Knife-edged angles as sharp as any in architecture define the buildings; Smithsonian castle, at far left.



National Gallery's East Building

New wing shows Dresden riches

The inside is as good as the outside. We are in the presence of giants and angels.

If one were to attempt to find a musical equivalent and, somehow, this occurs naturally in this space and with these works before one, it would be an exaltation of Bach—the thundering chords, the delicate nuances, the majestic and the crystalline, and yet all coherent.

It was no small challenge to find a show, the main show, one of six and all outstanding, to open a building that must be compared, in its interior spaces, light and evocativeness, with a medieval cathedral.

The idea to do a Dresden show as the centerpiece of this barrelful of cornucopias had come in nicely timed, fortuitous steps. In August 1974, on the morning in which the reestablishment of diplomatic relations between the United States and the German Democratic Republic was announced, J. Carter Brown, director of the National Gallery of Art, informed the State Department of the gallery's interest in a Dresden show. Unaware of this interest, the East German ambassador to the United States, Rolf Sieber, brought up the possibility of just such a show while lunching with Brown shortly after he took up residence in Washington. A pleasant lunch, to be sure.

Things clicked right along after that, bringing in New York's Metropolitan Museum of Art and the Fine Arts Museums of San Francisco. The exhibition, then, is a joint enterprise of the three museums that will show it and the German Democratic Republic. It will be seen at the National Gallery from June 1 through September 4, the Metropolitan Museum from October 21 through January 13, 1979, and the California Palace of the Legion of Honor, San Francisco, from February 18 through May 26.

Entitled *The Splendor of Dresden: Five Centuries of Art Collecting, An Exhibition from the German Democratic Republic,* it contains choices from eight

From the *Grünes Gewölbe,* the famous Green Vaults of Dresden, a dazzling display of the state

museums of that city, itself a combined treasurehouse of choices. It is a distillate of overwhelming distinction, presenting, in more than 17,000 square feet of special exhibit area, outstanding examples of Man's art ranging over many civilizations and some two millennia—from a 2,000-year-old Roman statue to the work of the 20th-century German Expressionists.

While its art treasures remain, today's Dresden is essentially a new city. The old one, dating back to the Middle Ages when it was the capital of Saxony, was virtually destroyed in two days of Allied bombing on February 13 and 14, 1945. The art for which the city

treasures founded by Augustus the Strong in 1730, come these intriguing examples of grotesque figurines—of pearl, decorated enamel and gold, made in Dresden in the early 18th century.

was famous survived. It had been removed for safety.

The showing, which contains more than 700 items, is designed not merely to display wondrous things but to present an overview of the process of collecting—an activity the various rulers and nabobs of Dresden pursued with knowledge, sensitivity and the voracity requisite to the aggregates of art that, in time, become collections. It was the particular distinction of these Dresden notables that, for the first time in Western civilization, their collections were opened to the public. And that is how the idea of a public museum was born. All of this, in section by section, displaying high treasures of painting, sculpture, porcelain, bronzes, drawings, jewels, ivories, books and curiosities, makes a dizzying and exhilarating panorama.

Goethe, who visited the Dresden collections in 1768, said the experience changed his life. "With what a delight, even a daze, did I roam through the shrine of the gallery! How many dim feelings came into clear view! How many gaps in my historical knowledge were filled here, and how greatly my perception widened as I took in the splendid, multilayered edifice of the arts."

Here, within an edifice that is itself a work of art, is part of what Goethe saw. —Bennett Schiff

Engraver and painter extraordinary, Lucas Cranach the Elder painted this commanding, if not quite congenial, view of Duke Heinrich the Pious in 1514.

The Armory of Dresden, with some 10,000 items, dates from the mid-1500s. Here, made in Wittenberg in 1553, is a full set of what was needed for jousting.

One of 130 pieces from the Green Vaults in the exhibition is this, naturally, celebrated figure of a Moor with a whole tray of uncut emeralds.

A joyous view is this typically, superbly orchestrated oil by the great Nicolas Poussin. *The Realm of Flora* is in itself a triumph of 17th-century painting.

Caspar David Friedrich, a 19th-century German Romantic artist, painted *Two Men Contemplating the Moon* in 1819-20.

Woman by a Window, Vermeer's exquisite painting, is one of only 35 authenticated paintings by the master of light.

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By David N. Leff

Brain chemistry may influence feelings, behavior

Pain, pleasure, memory and even sanity could be linked to morphinelike substances produced by our own bodies

Imagine an electronic calculator landing on Ben Franklin's writing table. Within a few minutes, the inventor of the lightning rod has figured out how to use the device, but his initial delight soon gives way to perplexity. What makes the confounded thing work?

Neuroscientists today are wrestling with a similar puzzle—what makes the human brain work? They no longer describe this three-pound mass in such quaint terms as a muscle for thinking, a telephone switchboard, a piece of intellectual clockwork or an organ that secretes thought as the liver secretes bile. Even a common metaphor today—the brain as supercomputer—has proved too simplistic. Searching for a better explanation of what goes on in our heads, investigators have taken a cue from Sigmund Freud, who suspected that neuronal communication was as much chemical as electrical. In fact, Freud predicted more than 70 years ago that someday "a special chemism" would be found to explain processes underlying sexual behavior and every mental or emotional event, thus disposing of the notion that mind is independent of matter.

That day seems imminent. A whole new nervous system based on chemical substances is being mapped out in laboratories all over the world, and the new research could bring practical payoffs in treating pain, emotional disorders and drug addiction, improving intellectual performance and giving the average person a safe means of controlling his moods. And because these findings suggest the possibility of altering behavior too, they are potentially controversial.

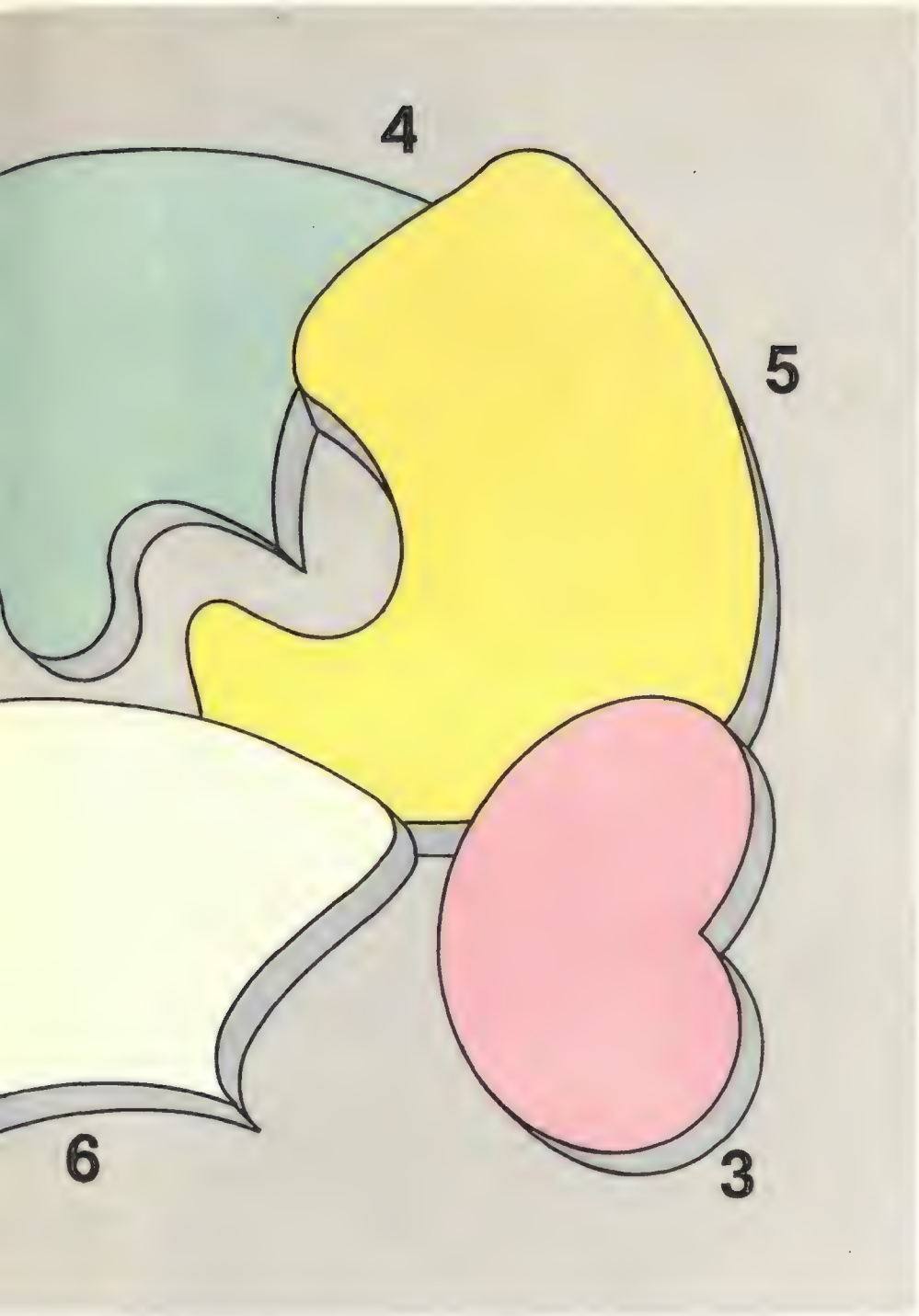
Stylized jigsaw puzzle of brain parts comprises (1) brain stem and pituitary gland; (2) area which includes limbic system; (3) cerebellum; and (4, 5, 6)

What makes the brain different from the heart or big toe is that it processes information. Nerve cells, or neurons, communicate with each other by releasing a variety of chemical messengers called neurotransmitters. The emergence of a new class of such transmitters—called peptides—has recently proved very exciting to scientists. So much so, indeed, that some speak optimistically of a "peptide revolution."

These tiny proteins consist of amino acids strung together in a row, like freight cars in a train. Just as a locomotive may haul many different kinds of rolling stock, peptides may contain any of the 20 different amino acids that go into the key molecules of life, all assembled in a straight line.

Some peptides are hormones, and the dramatic dis-

Illustrations by David Seager



occipital, frontal and parietal lobes. Organizing principle of this complex is uncertain, but it is now believed to be shaped by chemical interactions.

covery that the brain manufactures hormones to regulate its own emotions, moods and drives is taking neuroscience closer to the threshold of that special chemism which the founder of psychoanalysis envisioned. Freud's personal chemism consisted of a lifelong addiction to tobacco and a brief flirtation with cocaine. Both of these mood-altering substances are chemical cousins of morphine—that extract of the opium poppy from which the peptide awakening stems.

Morphine, like its faster-acting derivative heroin and its weaker sister codeine, is an opiate. It literally "goes to one's head" and alleviates pain while cheering mood (another side effect of this drug, whose name comes from the Greek god of dreams, Morpheus, is somnolence). Opiates work by homing in on clusters of brain cells specialized to handle the body's pain messages, and also on other cellular regions which have the task of turning on the body's sensations of pleasure. Morphine is employed medically for its analgesic, or pain-killing, action; heroin is marketed illicitly for its euphoric effect. Such opiates have been known for thousands of years; Ulysses' grief-stricken son Telemachus swallowed a "cup of joy" consisting of wine and opium—the latter a mixture of morphine and codeine. But the joys of opium conceal its sorrow: a hideous addiction.

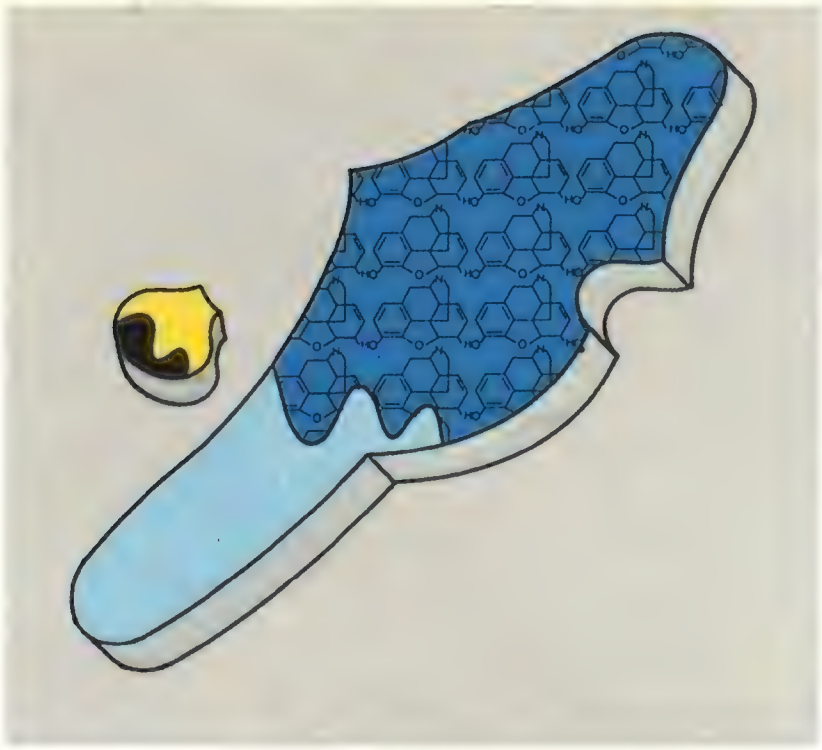
"What is a dire drug like morphine doing in a nice place like the brain of Man?" So mused Stanford University psychopharmacologist Avram Goldstein in 1971. In studying why narcotics cause addiction, he and his research team, working with mice, set the stage for the later discovery of natural opiate receptors in the human brain. It is startling to think that certain cells in the brains of Man and other mammals evolved for millions of years in order to embrace an extract of *Papaver somniferum,* the "sleep-bearing" opium poppy! A likelier explanation: these cells are fooled by morphine, whose structure is close to that of substances manufactured by the brain itself.

A variety of places in the brain, particularly in the deep recesses of the limbic system—the doughnut-shaped seat of our emotions—are, the experts found, turned on to opiate molecules. Two of these special regions are known to be involved in pain regulation—the medial thalamus and the periaqueductal gray matter. (The latter, whose Latin root means "around the channel," is often known simply as the PAG.) The pain-killing narcotics may concentrate to an even greater degree in the amygdala, which plays a crucial role in emotional arousal. Perhaps this accounts for the euphoric "high" that addicts seek from their opiate fix. Clumps of opiate molecules also show up bound to neurons in the distant brain stem, at sites that control coughing, nausea and vomiting. They also favor the pretectal nucleus, whose neurons command the pupils of the eye to contract or expand. One of the few places outside the central nervous system where opiates congregate is in the intestines.

It all makes sense: when a person takes heroin or morphine, his pupils contract to pinpoints. When an addict tries to "dry out," he suffers withdrawal symptoms of nausea and vomiting. Codeine is an efficient cough suppressant; other opiates go into highly effective antidiarrheal medicines such as paregoric.

In the early 1970s, some researchers began hunting for that supposed substance—the brain's own mor-

David N. Leff, a senior writer with Medical World News, *reports on biomedical research—from molecules and mice to Man himself.*



In this sequence, richly colored molecular pattern represents chemical influences. Here, brain stem and pituitary, from which peptides have been extracted.

phine—secreted as an internal pain-killer and mood lifter. If they could isolate or synthesize this secretion it might have medical significance, for even in large doses it might not be addictive—being a product of the body itself, not an alien seed. The substance was first isolated at the University of Aberdeen, Scotland, in December 1975 by neuroscientists John Hughes and Hans W. Kosterlitz, who extracted a small opiatelike peptide from pig brains. They christened this chemical enkephalin, meaning "in the head." Compared to morphine, enkephalin proved to be a simple little molecule, a five-amino-acid chain.

Almost in a dead heat with the Scottish researchers, Solomon H. Snyder and Rabi Simantov at the Johns Hopkins University School of Medicine in Baltimore isolated the same peptide from calf brains. Such a stubby molecule is easily synthesized, and various laboratories on both sides of the Atlantic soon put enkephalin together from five off-the-shelf amino acids. Could this be nature's own nonaddictive narcotic?

It was not. As a practical pain-killer, enkephalin proved a dud. Injected into the pain centers of rat brains, it gave analgesia only for seconds before being broken down by enzymes. This indicates how internally secreted enkephalin probably works in the thalamus, periaqueductal gray matter and other pain centers in the brain: manufactured to relieve Man and animal temporarily from traumatic pain or stress, it quickly dissolves so they can fight or flee.

Morphine's analgesic effect, on the other hand, persists for hours because it is insulated from enzymatic attack. To find out why, Candace B. Pert, a neuropsychopharmacologist now at the National Institutes of Health but then in Snyder's laboratory, went back to the drawing board and tinkered with enkephalin's architecture. She came up with an analog—a close chemical cousin—of enkephalin that packed only half its pain-killing punch, but was fairly enzyme-proof. Alas for early hopes, it turned out to be just as addictive as the hard stuff junkies buy on the street. Since then, pharmaceutical firms here and in Europe have designed far more potent analogs and are testing them on schizophrenics and depressives.

A link between psychotic disorders and the new brain peptides was first hinted at two years ago in Sweden. Lars Terenius, a physician and professor of pharmacology at the University of Uppsala, reported that he had detected a substance somewhat similar to enkephalin in the spinal fluid of four unmedicated schizophrenics and three manic-depressives in the manic phase of that disorder. When the latter flipped over into depression and the former improved under drug therapy, the amount of the substance diminished.

In May 1975, six months before the Scottish team would first report on the natural five-amino-acid structure of an opiate peptide in the brain, Avram Goldstein found a much bigger substance in the pituitary gland, the cherry-sized command module of the body's hormonal system. Later it became clear that its last five units, like a tail on a kite, composed enkephalin. This new, larger peptide was dubbed endorphin, meaning "the morphine within."

In another development, the eminent hormone chemist Choh Hao Li of the University of California, San Francisco, proved that a compound he had discovered in pituitaries eleven years earlier—beta-lipotropin—was a precursor of endorphin and enkephalin.

With this evidence in hand, Li began to synthesize

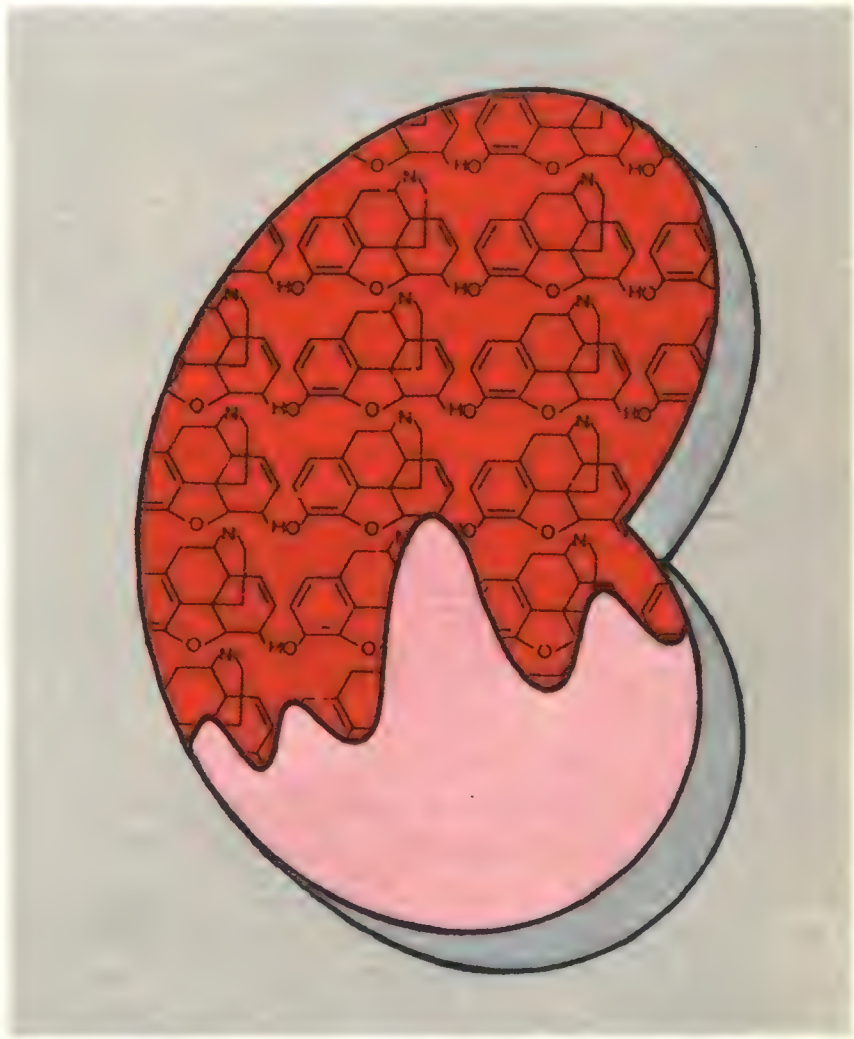
his complex peptide—now called beta-endorphin—in minute quantities and at great expense from store-bought amino acids. Last June, he began turning over some 250 milligrams of this material, valued at $100 per milligram, to Dr. Nathan S. Kline of New York. Kline, working closely with another psychiatrist, Heinz E. Lehmann, of McGill University in Montreal, injected doses of the peptide into 14 of his patients, with mixed but promising results. Two of four schizophrenics snapped out of their psychotic states for days at a time. Two patients suffering from depression also improved, although only temporarily. However, psychoses wax and wane all on their own, so it's uncertain that endorphin deserves the credit. A placebo effect—either on the part of the patient or the physician trying a new and exciting therapy—can't be ruled out at this stage. Perhaps the very notion of getting a powerful and costly new cure fools the patient's brain or pituitary into pouring forth extra endorphin or enkephalin that elevates the spirit, mitigates pain and promotes the body's own internal healing processes. This might explain acupuncture as well. Or do the twirling needles directly trigger endorphin or enkephalin secretions? Two teams of researchers have done experiments with animals and with human volunteers suggesting that the latter explanation may be the correct one.

The peptide flow is of major importance to emotion-controlling limbic area, most of which is in the mid-regions of the brain symbolized here.

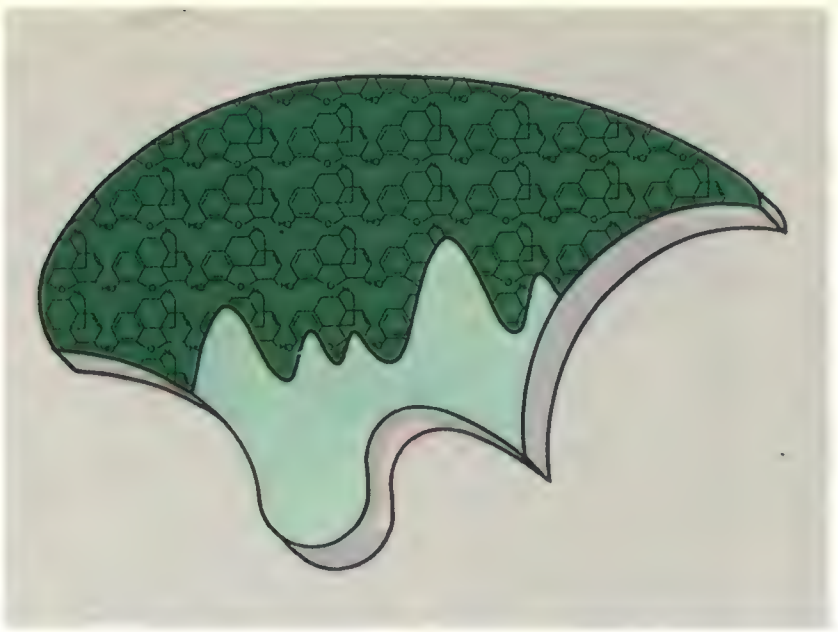
Bruce M. Pomeranz at the University of Toronto put cats to sleep with conventional anesthetics. Then he tapped the spinal cord with electrodes to measure the responses of single neurons that relay pain signals to the brain. Painful stimuli stepped up the rate at which these cells fired; acupuncture canceled out the increase. Then, to verify the endorphin connection, Pomeranz injected an opiate antagonist, naloxone. This substance, which wipes out the effects of morphine and related chemicals, is often a life-saver if given quickly to a victim of heroin overdose. As expected, naloxone neutralized the analgesic effect of acupuncture. Finally, when the Canadian researcher removed the pituitary glands from mice, thereby eliminating the main source of endorphin, they no longer responded to the needle treatment.

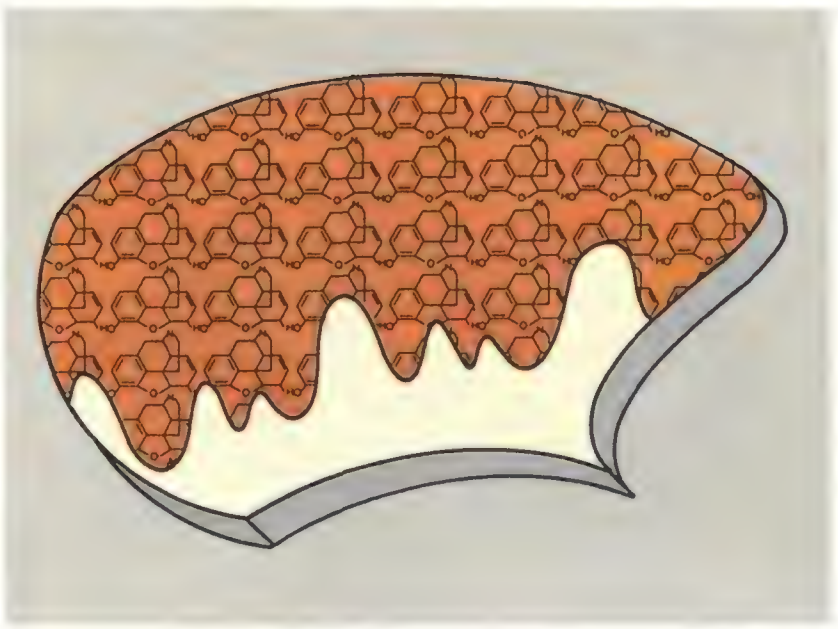
These findings were supported by tests of human subjects undertaken by Dr. David J. Mayer at the Medical College of Virginia in Richmond last year. The physiologist caused mild but measurable pain in his volunteers by sending electric shocks through the pulp of their teeth. Acupuncture, he found, made these twinges 28 percent more bearable, and sure enough, this relief was abruptly canceled by an injection of naloxone, which overwhelmed the internal secretion of brain peptide.

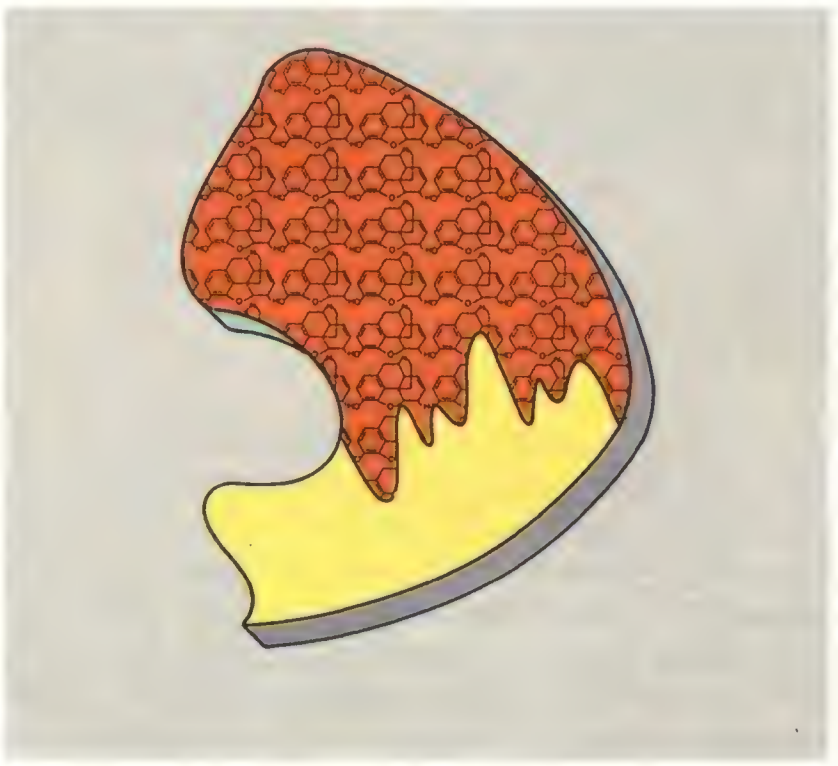
It's a truism that the perception of pain occurs in



Although endorphins seem of lesser significance in the cerebellum, a center for coordination of movement, carbohydrates similar to morphine may be present.







Occipital, parietal and frontal lobes (from top) mediate the higher sensory and intellectual functions. Though these areas in the brain harbor few opiate receptors, some peptides may act on them indirectly.

the brain and central nervous system, not in the skin or at the site of the injury. A mother who asks her child if his skinned knee really hurts or whether he only *thinks* it hurts is missing the point. The pain is no less real for being "all in his head."

Dr. John C. Liebeskind of the University of California, Los Angeles, pinched rats' tails or gave them a mild hot-foot to measure their pain perception. When he threaded an electrode into that tiny tunnel in the brain, the periaqueductal gray matter, and turned on a gentle jolt of secretion-stimulating current, the animal stopped noticing its discomfort, just as it did when it got a potent squirt of morphine in the same area. Perhaps, the psychologist suggested, the PAG is where the brain turns off its perception of pain in situations of stress—such as fright, flight, combat or coition—when hurting might hinder performance. That means some morphinelike peptide reaches the PAG cells from other neurons to elicit analgesia.

If enkephalin in the PAG and spinal cord soothes pain, what is the peptide doing in such high concentration in the amygdala, mediator of emotions? Solomon Snyder ventures that the brain sends it there to "act as the body's own tonic against disappointment." Many narcotics addicts, Snyder points out, first turned to drugs in order to counteract their profound emotional distress.

Among the most important parts of the brain's pleasure-reward system is a pair of tiny blue specks called the locus coeruleus, or "blue spot." Each consists of a scant two to three thousand neurons. A rat with an electrode implanted there will spend its days and nights pressing a lever that stimulates this center of pleasure and reward—forsaking food, drink, sleep and copulation. As neuroscientist Floyd E. Bloom of the Salk Institute at La Jolla, California, speculates, "A mother's smile may push a 'reward button'

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inside her baby's brain." This button, Bloom explains, might be plugged into the locus coeruleus. The reward is more than pleasure for its own sake; it is a motivation for good behavior and augments memory and learning. It tells the infant that, to provoke the maternal smile, he or she must have been doing something right, something worth remembering to repeat. Needless to add, the locus coeruleus is loaded with enkephalin molecules. In the past year or two, Bloom and his research team at Salk have traced the delicate spider web of neuronal axons radiating from these minute blue spots and found that they send their chemical messages virtually everywhere in the brain, notably to the hippocampus, a region connected in some way with memory, sleep, dreaming and perhaps even cognition itself.

Since reproduction is as essential to the survival of a species as the fight-or-flight reaction, Avram Goldstein surmised that opioid peptides might act as the brain's own aphrodisiac. If the enkephalin-making neurons play any part in sexual excitation, their role should be blocked by naloxone, the opiate antagonist. Once a week for three months, a male volunteer in Goldstein's private lab received a "double-blind"—an unidentifiable—injection of either naloxone or inert salt solution, while in the act of self-induced orgasm. However, regardless of whether he had received the drug or the placebo, the subject could not sense any difference in arousal, fantasy or climax. Thus, in this test at least, there was no suggestion that peptides themselves are agents of procreation.

The newly identified brain hormones may nevertheless play a part in that most elusive mental function, memory. Hungry rats, injected with enkephalin in a Tulane University School of Medicine experiment, learned to thread a maze faster and with fewer errors than cage mates injected with salt solution. In Belgium and in Spain, brain specialists have recently given another pituitary gland peptide hormone, vasopressin, to elderly people with failing memory and to traffic-accident victims with head injuries that obliterated their recollection of the past. The treatment strikingly restored their ability to remember. Now, carefully controlled trials of a synthetic vasopressin analog are about to begin in New York and Washington, D.C., to test the peptide's effect on memory loss in the senile.

"Suddenly," to quote Dr. James L. McGaugh, executive vice chancellor of the University of California, Irvine, and himself a leader in the field, "the peptide story is where the action is. Endorphin and enkephalin really constitute a new chapter in neuroscience."

Floyd Bloom seconds that opinion, saying that peptides could help reveal the mysteries of mental illness. For hallucinating schizophrenics and suicidal depressives, that would be good news. Clinical trials of various peptides and antagonists now under way or planned may revolutionize medicine by fine-tuning the brain with man-made molecules.

Beyond these real and present hopes for the ill, peptide discoveries also have implications for the well. Perhaps it will be possible to stimulate selectively brain cells that mediate hunger, thirst, memory, learning and mood with the precise substances that turn them on and off. Conceivably—if society should approve—people could one day choose from a wide assortment of morphine analogs tailored to increase creativity and intellectual acuity, or to produce any emotional state—anticipation, reverie, determination, curiosity, calm.

The moral implications are, of course, profound. What would be the impact of such a chemical keyboard of mind and mood control? Would such manipulation dehumanize people? Or would it lead them to a more joyful existence? That question is apt to be the focus of intense debate in the future. For now it is enough to know that answers may yet be found to Macbeth's plea to his wife's physician:

Canst thou not minister to a mind diseas'd,
Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain,
And with some sweet oblivious antidote
Cleanse the stuff'd bosom of that perilous stuff
Which weighs upon the heart?

At right, the pieces of the symbolic puzzle, with their colors intensified to suggest the impact of peptides, are shown in proper arrangement. Now scientists are attacking real puzzle of how brain chemicals work.

Splashing while it may, a fallow deer bounds through a pond that could dry up in hot season.

By Imre de Boroviczény

A fight to save ethereal Doñana and its wildlife

Spain's new national park, unspoiled for a million years, now faces all the threats of encroaching civilization

It is easy to see why many first-time visitors to Doñana, the new national park in Spain, leave the place feeling disenchanted (SMITHSONIAN, August 1973). On my first visit four years ago, I found the seven-mile drive from the gate of the Biological Reserve into little Doñana Palace, the research center, really awful. The road is a single track that makes your car jump up and down like a wild horse. And if you meet another car, you either close the windows and suffocate or hope for a long bath and a chance to clean pounds of reddish sand from car and clothing. You drive as fast as you can so as not to get stuck in the sand.

I remember killing about 200 mosquitoes on the wall of my Spartan bedroom, and going to sleep to the music of 2,000 others. There is a fine wire mesh on the windows, but the beasts get through.

People who expect an outdoor zoo, with lynx

As part of continuing natural process, dunes advance from the sea, inundating pines near Doñana coast.

crossing the track and the sky always full of flamingos —and a martini before dinner—are disappointed with this flat marshland. But to me it is all worth it. I sat there, my sweat sizzling in the sun, smelling the cow dung and the rotting vegetation, the brackish water, and then spotted a wild boar, and another, and a group of fallow deer, a pair of red kites, a far-off vulture, ducks here, pochards there, an eagle perched on an oak. In half an hour I spotted three dozen species in the seemingly endless plain. There is so much life to hear and see that it gets under your skin.

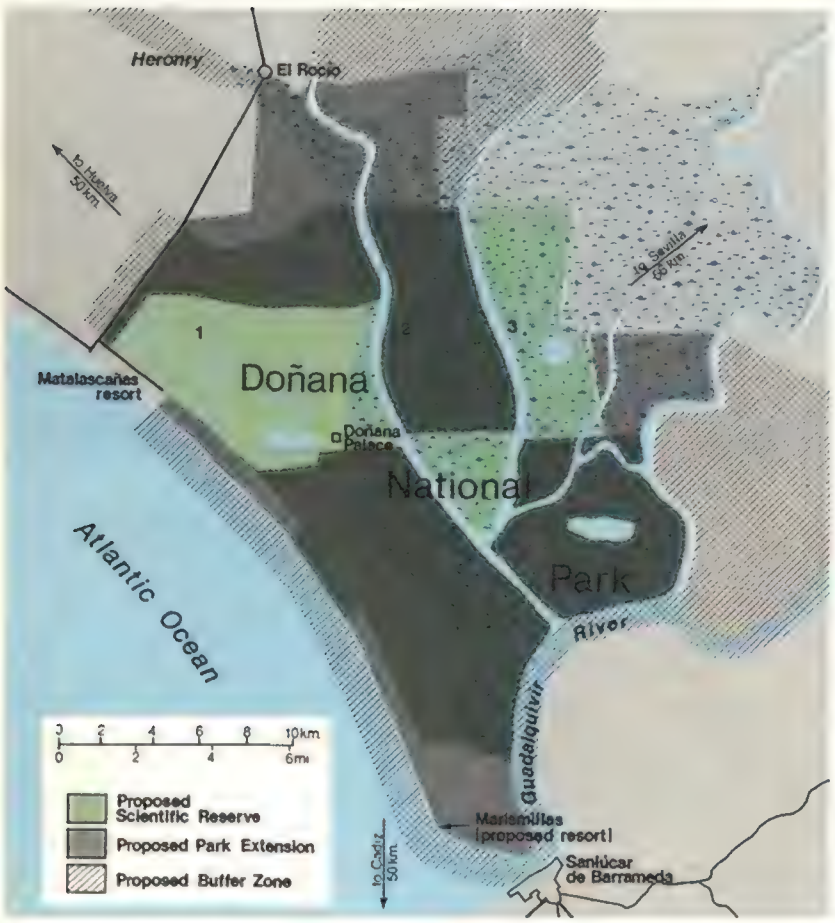
The area, one of the few large wetlands left in Europe, is in southwest Spain, where the mighty Guadalquivir empties into the Atlantic. A vast lake began forming there a million years ago, behind a natural levee built by restlessly growing oceanside dunes. Slowly filled by river silt and Atlantic sand, the lake became a great ephemeral marsh, *marisma* in Spanish, a drenched wetland in winter, a parched and bone-dry mud flat dotted with shallow ponds in the summer.

Today, ten thousand centuries later, a fraction of it has been theoretically "saved" for the future by being designated a Spanish national park; but most of that is still in the hands of private landowners and relatively unprotected from agricultural and urban sprawl, tree-cutting and similar 20th-century encroachments. In short, it is in grave danger.

Waterfowl long ago discovered the wetland, and the place became a favorite resting spot for vast hordes of

The author, an Austrian citizen who has lived and worked in Spain since 1962 as a journalist and photographer, has made eight visits to Doñana.

Across road from the park (right), luxury apartments of Matalascañas have brought people and pollution.



Troubled Doñana may thrive if present Spanish government plans succeed. Numbered areas 1, 2 and 3 are park's Integral Reserve: No. 1 is the Biological Reserve with its laboratories near Doñana Palace; No. 2 is land leased from a municipality; No. 3 is land bought with World Wildlife Fund money. Wetland is indicated by marsh symbols. Woodland of pines and cork oaks is to the left of marshes. Only a little of coastal dunes is now in park, but proposed extension will add more. Diagonal shading covers buffer zone; it will reach two kilometers into ocean to protect marine life.

birds in passage between Africa and northern Europe, as well as a nesting haven. Many of the Continent's graylag geese wintered here. Mallards, other ducks and spoonbills came by the tens of thousands. Cattle egrets and little egrets came; so did purple, gray, night and squacco herons, along with kites, harriers, vultures and enough flamingos to speckle the sky with pink. Eagles, too, among them the fierce-looking Spanish imperial eagle, which has come to be Europe's most seriously endangered bird of prey (p. 78).

Land animals found the area a hospitable home: wild boar, red and fallow deer, the Mediterranean lynx, genets, mongooses, turtles, vipers—in all, more than 180 species of such vertebrates breed there.

Inevitably, drawn by the plenitude of beasts, Man came too. The wetland became a prime hunting preserve of Spanish kings and noblemen, a hideaway for discussing matters of state when not shooting stags and boar. It is said that Doña Ana, daughter of the Princess of Éboli, lived here late in the 16th century and that it is from her the region gets its name, Coto de Doñana. In the little palace, where nuzzling fawns and agile vipers sometimes intrude, the painter Goya may have visited not quite 200 years ago with the Duchess of Alba, who lives on, as he painted her.

The sports of kings and courtiers were too sporadic to have much effect on Doñana's three interacting but distinct ecosystems: the system of coastal dunes, up to 160 feet high and today moving inland 20 to 60 feet a year, burying umbrella pines as they advance; an area of stabilized sand forming the soil of grass, shrub and forest lands; and the great marsh itself. All

in all, it is a complex, dynamic, interwoven system.

Late in the 19th century, however, the balance began to be upset as stands of pine were cut down for firewood, and oak trees for charcoal. Early in World War II, farmers started to drain the wetland on the left bank of the Guadalquivir; by now, on that side of the river, little wilderness is left.

In the mid-1950s urban developers and agriculturists proposed cutting down Doñana's remaining pines and oaks, draining the "useless" wetland, and planting eucalyptus trees for pulpwood. That and the seemingly inexorable spread of rice fields would have put an end to all the millennia of wildlife history. They did not reckon with the stubbornness of Dr. José Antonio Valverde Gomez, a young biologist and ornithologist who in 1952 had visited Doñana, banded 2,000 herons in ten days, and made the preservation of the site as a globally important wetland his chief mission in life. He made innumerable trips there, joining, in 1957, an international expedition organized by British biologist Guy Mountfort. This expedition aroused concern about Doñana, its promise and its plight, beyond the borders of Spain.

With help from some friends . . .

Dr. Valverde started a Europe-wide fund-raising campaign with the help of some influential friends, among them a local landowner and amateur ornithologist named Mauricio González Díez of the Spanish sherry and brandy house of Gonzalez Byass. Even a hunting club in faraway Denmark contributed when its members realized that if Doñana's marshes disappeared, so would their ducks and geese.

The most important donation—$420,000 to buy land—came in 1969-71 from the World Wildlife Fund. The Spanish state gave about $700,000, and some local landowners agreed to sell part of their properties if the resultant usage would be scientific and if the eucalyptus-planting notion were abandoned. (In 1964, the Doñana Biological Reserve of 23,000 acres had been established, with Dr. Valverde as director. Five years later a government decree created the Doñana National Park of 97,000 acres. In 1973 almost half of this—43,000 acres including the Biological Reserve—was declared an Integral Reserve dedicated to scientific research, where visiting is by permit only.)

Still, it was less than half a loaf. Of 120,000 acres of marshes remaining on the right bank of the Guadalquivir, only about one-sixth was included in the park, and of the dryland areas, almost all of the coast and the dunes were excluded. Most of the territory remained either municipally owned, or private property where the owners (no provision was written in for buying them out, thus no compensation was provided for

A young Mediterranean lynx (a species seldom seen in the park) toys with last tidbits of a wild goose.

Short-toed eagle bears home a partly swallowed snake, which young will seize by tail and pull from throat.

Bee eaters, which nest in burrows in sandbanks, perch on dry twigs and await prey to catch on wing.

A flight of flamingos, having taken off from a Doñana pond, streaks the sky with pink.

them) could raise cattle or fell trees and hunt at will.

Administration of the park (apart from the scientific reserve) fell to the National Institute for the Conservation of Nature, ICONA. Reclamation of farmlands outside the park—some less than 30 yards from the park boundary—was the responsibility of another bureaucracy in the Ministry of Agriculture, the National Institute of Agricultural Reform and Development, or IRYDA. The two did not always see eye to eye or work hand in hand. ICONA is charged with saving flora and fauna for future generations, and IRYDA's mission of reclaiming arable land—encouraging the use of pesticides and herbicides in the process—is described by the government as "of national interest."

Nevertheless, a start had been made toward saving Doñana, and the prospect for the sanctuary was promising. Then disaster struck. In July 1973, during an extremely hot and dry year, birds began dying.

That fish should expire each summer as the ponds evaporated and the wetland dried was only to be expected, a phase in the annual way of life and death. But a major bird kill was something else. Thousands of herring gulls, teal, herons, flamingos, Kentish plovers, coots, avocets and black-winged stilts died. The total mortality was between 50,000 and 100,000.

Clostridium botulinum, the bacterium that causes botulism, was blamed officially by the Ministry of Agriculture and by some investigators, including a Dutch team that analyzed samples of dead waterfowl late in September 1973, 10 to 12 weeks after the birds began dying en masse. True, after the first few thousand birds died, their decomposing carcasses and the presence of rotting vegetation below water level in the few places where any water remained constituted an ideal breeding ground for *C. botulinum*.

But overwhelming circumstantial evidence pointed not to the *C. botulinum* bacterium, but to pesticides as the original cause of the mass mortality. Most likely, it was an organophosphate pesticide—from the rice fields not a dozen miles away—that killed the first waterfowl. This kind of pesticide, though acutely toxic, is less persistent and less easy to analyze in long-dead birds than are DDTlike organochlorine compounds. Recent research by Professor Jacinto Nadal, a Spanish zoologist, has identified herbicides—also used almost indiscriminately by farmers in the region—as probable indirect agents leading to botulism outbreaks. Uncontrolled use of herbicides destroys underwater vegetation that, if not immediately removed, causes the

A Spanish imperial eagle shelters her young in shade of her wings. A dozen pairs live at Doñana.

water to become more alkaline and less oxygenated, a fine medium for *C. botulinum*. Still another factor, Professor Nadal found, was man-made alteration of underground water levels for irrigation, drinking and sewage disposal, and the lowering of water tables that results is hardly peculiar to Andalusian Spain.

Even before the 1973 calamity, the results of civilization's invasion were evident to any naturalist who had known the place a decade or more earlier. On tracts where formerly hundreds of purple gallinule could be observed, none could now be found. Lapwings, pratincoles and redshank were far fewer than before. The Spanish imperial eagle and other birds of prey were becoming less and less productive. Crested coots, cranes, glossy ibis, white-headed ducks, ferruginous ducks and ruddy shelducks were disappearing. The reason was no mystery: increasing quantities of pesticides and herbicides were needed on the rice fields and, besides using pesticides which could be fatal to the birds—they had no way of knowing they should not fly outside the park to feed—farmers were shooting them without regard to species or season.

The appalling bird kill at least thrust Doñana into the international limelight, aroused the worldwide concern of the conservation community, and made it unlikely that easy assumptions about the inviolability of Spain's most important national park ever again would be taken at face value, without close scrutiny.

Birds have died at Doñana every summer since 1973, but in decreasing and less alarming numbers, partly because some years have been wetter and partly because private land owners in the park are permitting biologists and wardens freer access to their lands to remove quickly the infected carcasses and shoo birds away from polluted areas. But scientists have found that the amount of biocidal residue in the region is still increasing and it is clear that the use of insect- and plant-killing chemicals is far from controlled. Nor is any constant monitoring of pollution being conducted in watercourses flowing into the wetland. Huelva, a few miles up the coast, is a highly polluted port and the seaborne wastes from its factories are carried straight toward Doñana's shores. Yet today, once again, things are looking up for the parklands.

This last spring the Interministerial Commission for the Environment won the agreement of all agencies concerned for a 29-percent enlargement of the park, to include and preserve, among other areas, the fragile coastal dunes (a projected superhighway along the seashore from Huelva down to Cádiz will be relocated well inland from the wetland). The rigidly restricted Scientific Reserve would be established. Strict controls —and an eventual ban—would be imposed on hunting, tree felling and grazing in the 75 percent of the park still privately or municipally owned. Those who defied the rules would face expropriation.

Also agreed upon was redirecting the spread of farmlands and threatened urban sprawl (any increase in rice fields or in the size of the tourist village of Matalascañas is to be shunted away from Doñana rather than toward it). The important La Rocina heronry northwest of the park will be given extra protection as part of a 56,000-acre buffer zone.

All this is part of a master plan for the parklands to be proposed for enactment into law by Parliament this summer. Pressing for it are Dr. Javier Castroviejo, a young biologist and disciple of Dr. Valverde, who has succeeded him as director of the Biological Reserve; ICONA director José Lara, and cabinet official Eduardo Marigó, backed by Spain's new but energetic conservation societies.

And so there is reason to believe that the Spanish government is finally getting itself together on the side of conservation and protection of a priceless preserve. But it may take about $12.4 million to buy out all of the private landholders and, until that problem is solved, Doñana will remain a national park in jeopardy. Spain, after all, is struggling desperately to find ways out of an economic crisis, aggravated by high tensions of the political transition from a dictatorship to a modern Western democratic state, and will find it very hard to get the money required without aid from abroad. And until a solution is found, Doñana's land-roving, aquatic and airborne wildlife populations will be living high-risk lives.

Two young genets make themselves at home in a tree; they emerge at night to hunt birds and insects.

The round house, where everybody lived, dominates the compound of modern-day Iron Age community. The other structures include houses for all of their livestock.

"Iron Agers" proudly direct the cattle pulling their rough-hewn cart. They made nearly everything they used, including some crude iron tools.

By Timothy Green

Modern Britons try the Iron Age, find they like it

Volunteers in a BBC experiment spent a year living the way the Celts did 2,300 years ago, and thrived on blood pudding, clay 'shampoo'

Timothy Green ranges the world from his London home, frequently on assignment for SMITHSONIAN.

Two women out gathering primroses in the woods of southern England in the spring of 1977 were startled to be confronted by a wild-looking man with a beard, clad only in a rough woolen tunic and wielding a primitive billhook. The woods were private, the stranger told them, so would they please go away and tell no one what they had seen. About the same time, woodsmen were encountering long-haired people busy setting traps for squirrels or chasing rabbits with swift-running ferrets (p. 85).

These strange goings-on suggested that some long-lost band of Celts, the inhabitants of these rolling downlands 300 years before the birth of Christ, had somehow been bypassed by Julius Caesar and William the Conqueror, and survived in rural tranquility into the 20th century. Well, not exactly. This year word went round the little village of Berwick St. John that it was all right now for locals to go calling on the bearded strangers. For this "Iron Age" community was simply the brainchild of a British Broadcasting Corporation producer (and archaeology buff) named John Percival. Fed up with archaeology shows on TV that "consisted of backsides of diggers and chattering archaeologists," he conceived a secret project to create an Iron Age village to give people a better understanding of what that life was really like. From a thousand volunteers who responded to discreet newspaper ad-

vertisements, he chose six couples and three children to spend a year living in a careful reconstruction of an Iron Age settlement. To create the right environment, he found an obliging estate owner, who was prepared to rent 35 acres of woods and 15 acres of fields down a dead-end lane to these budding ancient Britons, who would be relatively cut off from all contact with the outside world. The only concession the BBC would make to the 20th century was to allow the settlers medical supplies and emergency visits by a doctor, plus some regulations dictated by bureaucrats: schoolbooks for the children and four exits from the hand-built round house to satisfy fire laws. And, of course, John Percival and his television crew came jolting through the woods in Land Rovers twice a week to film what was going on for a 12-part television series, which premiered in Britain in February and, it is hoped, will eventually be shown in America. (The village was to be burned after the experiment to protect the estate owner from hordes of curious tourists.)

So one chilly March day in 1977, a bold band comprising three schoolteachers, a hairdresser, a nurse, a doctor, a social worker, a builder, a mathematician, a National Farmers Union official, two students and three children aged seven, five and three, took off their modern jeans and sweaters, donned woolen shirts handed out by the BBC and set up tents. The tents were needed because all the BBC had done in advance was to clear a site in the woods, bulldoze a boundary wall of earth, and hand out a few metal tools. Water had also been piped in to a "well," because the water table was 200 feet down. For company they had a mongrel dog named Sirius and an Old English sheepdog retriever called Emer, three cows, four pigs, nine goats, 25 sheep, 40 chickens and some bees. Once the 20th-century vehicles drove away, an Iron Age calm settled over the woods. The volunteers went to work to build a home and create such comforts as they could. Admittedly they were not entirely unprepared—they had taken evening classes in potting, metalworking and weaving and had been advised by "survival" experts on what could safely be eaten in the woods.

Happily, they survived. British archaeologists differ over whether they have lived as Iron Age people. But without question they have existed much closer to the life of 2,300 years ago than of today, as I discovered during a visit just before their sojourn ended.

The muddy track threatened to engulf my car long before I reached the Iron Age village, so I abandoned it and set out on foot. After about a mile there was a whiff of woodsmoke, and presently a clearing opened out. A few goats were straying about, and a rather ragged figure in a woolen jerkin and trousers, with a huge basket of logs on his back, was staggering toward

The volunteers were supplied with some hand tools, made the rest.

Man at right grinds corn while others help to prepare meal. Everyone took turns cooking for the group.

a compound in the middle, which was surrounded by an earth wall topped by a wattle fence. Over the palisade gate a sheep's head presided, an Iron Age sign of welcome. Within was a yard, ankle-deep in mud, through which a cheerful round-faced woman with bare feet was lugging a bucket of water from the well. A young fellow, who looked like some prehistoric Daniel Boone, with a squirrel cap and calf-leather moccasins, was perched on a log, twisting and bending strips of hazel into a basket (p. 84). Their round house dominated the scene. Before its deerskin door a small two-faced stone head, perched on a stick, leered at the outside world to ward off evil spirits, while at the same time smiling benevolently toward the interior to bless those living within.

Stooping slightly to enter, I was at first confused by the darkness and smoke. Apart from the small doors, the only light came from the log fire blazing in a shallow depression in the center from which the smoke drifted upward to escape through the thatch. A big black cauldron was suspended over the flames.

The barefooted woman, whose name was Kate Rossetti, set down her water bucket and started stirring the cauldron. She was preparing a beef stew from part of a cow killed a few days before, flavoring it with parsnips, tickbeans, wild garlic and thyme. Nearby in a clay oven, the day's bread was baking. Her husband, John, eased the basket of logs off his back and began stacking them by the fire. "We never allow it to go out," he explained, "and it eats up wood—a ton every five days. Actually we have succeeded in making fire by rubbing two pieces of softwood together—not hardwood against softwood, as most experts recommend—but we aren't expert."

As my eyes grew accustomed to the gloom, I remarked how spacious the round house was. "It's 48 feet across and nearly 30 feet high," said John, "but it took us much longer to build than we expected. We spent six weeks making the basic structure, and eight weeks thatching. We worked all day, every day, on it." Wattle screens and straw blinds divided the house into 13 "rooms" around the low walls, thus ensuring each couple the modern luxury of some privacy. They slept between animal skins on low wooden beds.

The round house proved surprisingly warm and comfortable. Indeed, the Iron Agers endured one of Britain's coldest winters in years without the inconvenience suffered by most citizens troubled by power cuts. When two feet of snow fell, they just stayed in the round house with plenty of food and logs and got on with the weaving and wood carving. The place was so cozy that Jill Grainger, a 30-year-old teacher, told me she had never closed the straw windows of her room.

The central hearth was always the focal point of the community. Here everyone sat round in the long winter evenings, each telling his or her life story to while away the time, or picking out a tune on a six-stringed lyre. Once in a while they sang. "We usually sang hymns," confided Sharon Preston, "simply because everyone knew the words." And they cheered themselves with such homemade brews as mead, elderberry wine and beer. "Our mead was the most successful," recalled John Rossetti. "All we had to do was mix honey and water with the dregs of some elderberry wine to make it ferment. It was ready for drinking in three or four weeks and was very strong. We made 23 gallons, and it's all gone."

Each couple also took their bath in a big tub beside the fire, warming it up by plunging pieces of heated metal into the water. "It was a luxurious way to bathe," John Rossetti said, "sitting there by the fire in the midst of the conversation. If the water cooled, you just popped in another piece of hot iron." Hard scrubbing was necessary because their experiments at mak-

John Rockcliff trims a goat's hoof while Sharon Preston holds the animal. Sarah Rockcliff is at left.

Helen Elphick picks garlic. Foraging training before experiment helped.

ing soap out of animal fats were not successful. Eventually, most of them became resigned to being a bit grubby most of the time. And in the absence of good soap, the women took to "shampooing" their hair with clay. "The clay picks up the grease," said Jill Grainger, "but you have to rinse it a lot."

Bathing, like most things, was done in leisurely fashion, for they swiftly forgot the pace of modern life and lapsed into the slower rhythms of the countryman. No one had a watch, and although they built a sundial, they soon destroyed it because they found it tended to impose a schedule on them. "You'd look at it and think 'it's time for lunch'," said Sharon Preston, "but you might be busy and lunch might not be ready." Sunrise and sunset determined the shape of the day, especially in winter. "Life slowed down then," said John Rockcliff, who had once been a builder. "We almost hibernated, and felt tired without 12 hours' sleep."

But their achievements suggest they cannot have spent too much time lying around. While the beef stew grew tender in the cauldron, John and Kate Rossetti took me on a tour of their domain. Around the compound were thatched farm buildings. First we looked at the pigsty. Despite the fertility rattle on top, Kate said, they had experienced great difficulty in getting the pigs to breed. But the pigs had made excellent bacon, and their fearsome teeth had been fashioned into primitive jewelry, capped with little bronze holders, that several of the Iron Agers wore around their necks. The nine goats, stabled in their own miniature round house nearby, had been more obliging. They had produced 16 kids during the year, including two born that very morning. "We've really been very successful," said Kate, "because our sheep also had 13 lambs, and we've reared four calves." But the chickens strutting all over the place had been less amenable. The BBC had thoughtfully provided a handsome Old English breed, including some splendid black and gold cocks, but the Iron Agers found that these hens laid eggs only in the spring.

The meat available from their domestic animals was supplemented by rabbits, squirrels, an occasional deer and even the odd rat, which was spit-roasted. The only trouble with rats, someone confided later, was that there was so little meat on them it was scarcely worth the trouble.

Beyond the woods, the Iron Agers worked on ten acres of pasture and five of cultivated land. They grew wheat, barley, oats, peas and tickbeans, all without benefit of modern pesticides or fertilizers. But they made sure of appeasing the gods. On August first, they duly celebrated the Celtic festival of Lugnasad to ensure a good crop. As everyone danced round decked out in body paint made from clay mixed with pig fat and tinted with vegetable dyes, Iron Ager Brian Ackroyd, smeared from head to foot in white wood ash to represent the Spirit of Goodness, ceremonially buried an ear of corn. The gods were content. The resulting harvest was so bountiful that reaping it all became a real chore.

It took them several days to develop a good swing with their long-handled reaping hooks, and they found it frustrating to stop every two or three minutes to sharpen the soft iron blades. Yet in four weeks they cut, dried and carried half a mile back to their village three and one-half tons of hay, which they fashioned into six stacks that provided some of the feed for their animals through the winter.

They concluded, however, that a true ancient settlement would have needed more land and larger flocks. As Jill Grainger told me, "We had 25 sheep and that's not enough to clothe us. We estimate that at least 60 sheep would be necessary for a community of our size." Even so, they were all wearing garments made from

wool cut from their sheep with sharp flints. The wool was coarse and slightly greasy, but kept them warm and resisted the rain. Indeed, their real worry was not clothes, but shoes. "The 20th-century thing we miss the most is footwear," said Jill, wriggling mud-caked bare feet before the round-house fire to thaw them out. "The Wellington boot was the most fantastic invention. Going barefoot in winter mud is cripplingly cold. I think the Celts must have had shoes." At the beginning, the Iron Agers, following the advice of archaeologists, made shoes out of cowhide, pigskin and sheepskin, but they were not waterproof and wore out in a few days. Martin Elphick came up with the best solution: he made himself clogs from two strips of wood, each about one-half inch thick, between which he fixed a strip of calf leather and then added leather uppers. They lasted well and elevated his feet out of at least some puddles.

Inventing footwear was but one example of the volunteers' experiments by trial and error to see how their Iron Age ancestors might have coped. "The most frustrating thing," said Peter Little, who proved one of the most dexterous craftsmen of the group, "was not being able to do things as well as the Celts. We could probably equal their skills in ten years, but in one year we're only just getting the hang of it."

Weeks were wasted, for instance, trying to make pottery because they not only had to build their own kiln, but had to learn exactly the right amount of ground-up stone or "grog" to put with the clay to make it bind correctly. The first pots crumbled to dust.

The Iron Agers proved more skillful at metalwork: they constructed a "forge" in which they swiftly found they could shape and weld iron. The real secret, John Rockcliff revealed, was a good pair of bellows, as he displayed what looked like a dirty old carpetbag. "We have been able to build up a heat of 1,500 degrees C," John said proudly, "so that we can do almost anything on the forge. Unfortunately, we have not cracked the smelting side, but given the metal we can make all the tools we need."

The latter-day Iron Agers found that barter was essential to their whole survival. So they traded with the BBC team. Goat kids, a calf, pots, and baskets made from hazel twigs were swapped for salt, eggs, cheese and honey. The volunteers had expected to be self-

John and Kate Rossetti enjoying peaceful, but not idle, moment near hearth in community house.

Brian Ackroyd and Peter Little try their hand at weaving baskets. Even with practice, each took entire day.

Ackroyd uses a hot iron bar to burn hole in cart axle for wooden pegs. The procedure was extremely slow.

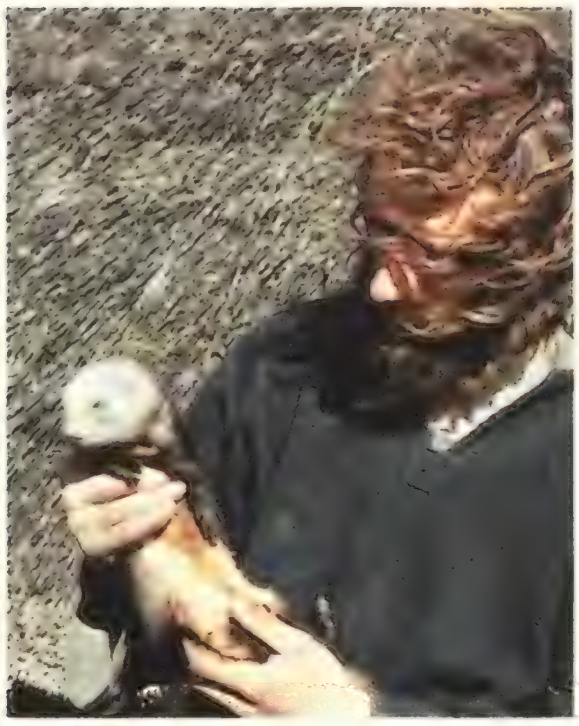
sufficient in honey (they ate a pound a day), but their modern bees did not take kindly to clay and straw hives (below) and showed their displeasure by buzzing off to swarm in nearby trees. The honey harvest yielded scarcely 40 pounds, so there was no option but to trade. The art of cheese making also took a while to master; it was not until they killed a calf and took rennet from its stomach that they were able to make hard cheeses. Despite the need to buy, they ended the year as creditors to John Percival and his crew.

Even with swapping, however, the viability of their community depended on their using everything a dead animal had to offer. "We use the heart, the brains, the tongue, the skin, even the hooves for glue," explained John Rockcliff, "and we keep the blood to make blood pudding, which has been a staple of our diet." Without the benefits of refrigeration, some of their meat rotted, but they soon discovered that if the meat was hung in the smoke from the perpetual fire, the flies usually stayed away. The meat often tasted high, but at least was not maggoty.

Meat formed a large portion of their diet, which did not make eating easy for a few of the volunteers who were vegetarians. Indeed, the lack of much alternative to meat caused considerable tension. Lindsay Ainsworth and her husband, for instance, loathed meat, and on her days as cook she prepared only a vegetable menu. This led to friction between Lindsay and the rest of the group. The Ainsworths stayed on, but were forced to quit the village in December when their five-year-old son Nicholas became ill.

Although the Ainsworths' three children now look

Dressed in wool from the group's flock of sheep, Jill Grainger spins raw wool, wraps spindle at bottom.



Little holds a ferret used for hunting rabbits. Iron Agers ate everything, including rats.

Bees deserted wood-and-clay hive for nearby trees. The volunteers had to barter for honey with TV crew.

Inside view shows details of mud wall and thatched-roof construction. The house took 14 weeks to build.

back on their Iron Age experiences as the "silly time," they adapted readily to the freedom of the village life while they were there. Peter, the oldest, spent long hours wandering through the woods trying to trap animals, and with his brother Nicholas even tried his hand at welding in the camp fire. "Nicholas would take over the bellows at the forge and keep them going for hours," recalled Martin Elphick. "I am sure that in a real Iron Age village he would have been a fully fledged blacksmith by the age of ten."

The satisfaction of becoming more dexterous seems to have been a real reward, not just for the children but for everyone. "I've learned loads of practical things —looking after animals, weaving, even making my own home," said Jill Grainger, "and above all I've enjoyed living in a community and seeing myself and others in terms of a group of people."

They had settled so well into the Iron Age that I found they had a sense of real regret at the prospect of having to travel 2,300 years forward in time.

"We'd all have been ready to do it for another year if the money had been available," said Peter Little. The only concession they would have demanded for a longer stay would have been some contact with family and friends. The BBC took them on a three-day outing to the sea during the summer, when they camped on the beach in a rough shelter, but otherwise their horizon was limited by their woods. Relatives were barred.

The essence of the experiment would have been ruined if there had been weekends off at home to bathe, wear normal clothes and sleep in soft beds. Actually, Martin Elphick, a junior hospital doctor before he went Iron Age, did sneak off to an unauthorized two-day break on his own during the summer. He dug up a pound note buried carefully in advance and hitchhiked to the seaside town of Bournemouth where, still in Iron Age garb, he slept on the beach and treated himself to fish and chips. No one knew where he had gone, but after two days he was ready to return.

Claustrophobia was intense during the first few months as the villagers adjusted to the slow, pastoral existence of the Iron Age community. But after 12 months in the wild, I sensed, their new way of life had become their normal one.

British viewers have sometimes found it all very recognizable, also. As Katharine Whitehorn, *The Observer*'s columnist complained, "The odd thing about the series was that it *didn't* seem odd. You could run into those glowing women in homespun frocks round Hampstead or Chelsea any day, explaining the virtues of naturalness, breast-feeding and whole grains. . . . The moment when they all emerged from their lake fishing with innocently gleaming bare bottoms (and fronts) could have been yet one more remake of *Hair*; and even the huge straw roofs they made seemed but the dining area of some undiscovered Club Méditerranée. . . . What they were really enacting was our own myth: a dream of simple communal living."

What the Iron Agers were really up to has been debated by archaeologists. "As a serious scientific project, I have grave doubts," said Dr. John Coles, lecturer in archaeology at Cambridge University and author of the best-selling *Archaeology by Experiment*. "If you think this is really like living in the Iron Age, the hell it is." But Oxford University's Professor Barry Cunliffe is prepared to be much more generous. "All right, it is *not* an experiment," he said. "They have simply been trying to live out some of our guesses. But I have found it absolutely fascinating. It makes marvelous television and I welcome it for that. But also when I visited the site, I was very intrigued by walking around and examining the effect that these villagers had had on their environment. Just looking at their rubbish heaps, the paths they had worn, the effect on the soil, told me a lot about Iron Age sites that I have dug."

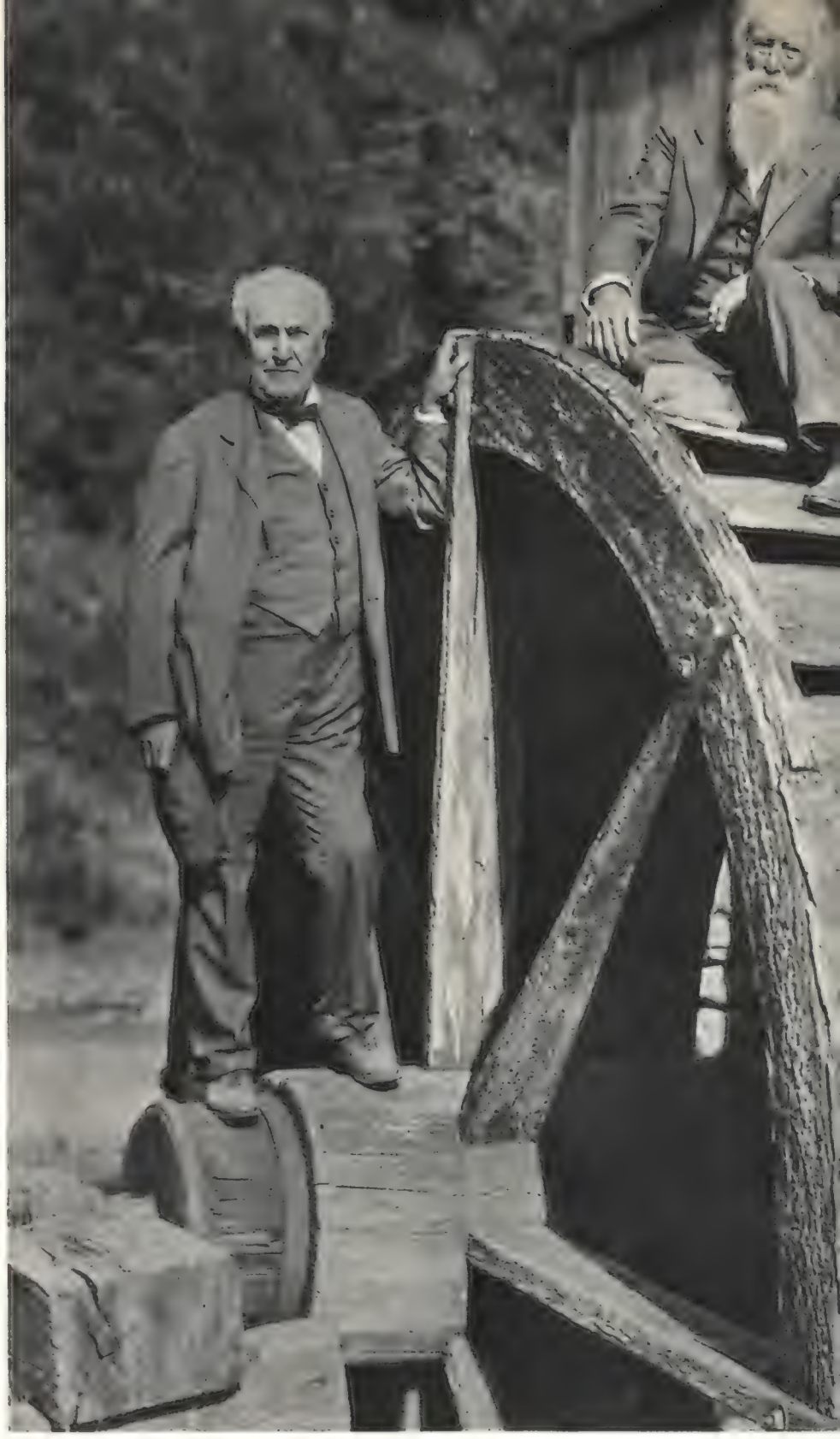
One long-standing mystery was solved for Cunliffe when he noticed just inside the door of the round house a shallow depression of scooped-out earth. He remembered that he had found this at every Iron Age site he had ever excavated. Archaeologists had always questioned whether some religious significance should be attached to this strange hollow in the ground. Cunliffe asked the villagers how their depression came into being. Oh, they replied casually, whenever the chickens strutted in out of the rain, they took a dust bath just inside the door. They had worn away quite an interesting-looking hollow, hadn't they?

Lindsay Ainsworth uses a twig to clean three-year-old Robin's teeth. Cleanliness proved nearly impossible.

By Dorothy Boyle Huyck

Over hill and dale with Henry Ford and famous friends

Forays in the wild, epicurean viands in the camp, sustained three industrialists and a naturalist junketing through back country and mountains



"It was a great pleasure to see Edison relax and turn vagabond so easily, sleeping in his clothes, curling up at lunch time on a blanket under a tree and dropping off to sleep like a baby, getting up to replenish the campfire at daylight or before, making his toilet at the wayside pool or creek," wrote the naturalist John Burroughs. As resident nature consultant, Burroughs had been jouncing along the rutted roads of the Adirondacks, Vermont and Massachusetts during a 1916 camping expedition organized by Thomas Alva Edison, Harvey Firestone and Henry Ford. Although business prevented Ford's joining this first of several back-to-nature junkets, reports of Edison's sleeping like a baby and of the ailing Burroughs' restored health (credited to "the vibrations of the motor car") guaranteed his later presence with one of the most unusual camping clans that ever pitched a tent.

The following August, 6,500 workers at the Edison factory in West Orange, New Jersey, gave their employer and Harvey Firestone a rousing sendoff as Edison's touring car, followed by a truck bearing quantities of food and gear, left for Roxbury, New York, and John Burroughs' home. Edison announced that he expected a rattling good time, leaving orders that he was to be tracked down only in an emergency.

When the party arrived and pitched camp at Burroughs' Woodchuck Lodge, they found their benevolent, bearded friend not particularly inclined to head for the hills with them; after all, he was 79 and feeling poorly. A dinner of fine fish served in the dining tent, a warming campfire and the sight of an "extemporized village under my old apple trees"—tents complete with electric lights powered by the storage battery that Edison had brought along—changed Burroughs' mind. The following morning he joined the crew that took off for the Adirondacks. A reporter correctly identified Edison as "the great electrician" and Firestone as "the maker of Firestone tires," but missed completely with the lover of bluebirds and honeybees, relating Burroughs to the adding machine.

The famous "woodsmen" set off into the mountains "to bask in Nature's primal Sanities" with a cook, five servants, and a heavy truck, crammed with camping equipment, refrigerator and food, in tow. Burroughs marveled at the geologic age and mass of the Adirondacks and Firestone deliberately broke one of Edison's cardinal rules by shaving.

In 1918 Thomas Edison, John Burroughs, Ford, Harvey Firestone clambered onto a waterwheel for portrait.

Caravan of elegant touring cars and lumbering supply vehicles accompanied nature lovers on all their trips.

By the time they parted company, each had begun to assume a role that became established in succeeding safaris. Firestone, the youngest of the group, undertook the responsibilities of general manager and commissary officer. Edison functioned as navigator, rule-maker and flower-gatherer. He "writes us, giving the route," according to Firestone. "Then he writes again, giving another route and when we actually start, he commonly selects a third route. We never know where we are going, and I suspect he does not either." Over the years each camper complained that Edison never chose a comfortable line of march if a crude one were available. Burroughs, whose lean anatomy was thickest at his beard, eyed the navigator's frame and noted that Edison carried his shock absorbers with him. The entourage arrived at more than one crossroad, argued at length on how to proceed, then followed Edison's orders down still another rough route.

When Henry Ford signed on in 1918, he became John Burroughs' junior partner in the business of birding, and contributed an expertise in matters mechanical that saw the caravan through several crises. The party had scarcely left Pittsburgh when the fan in one of the Packards broke, causing blades to snap and puncture the radiator. Ford drilled the fan stubs and literally stitched the blades in place with copper wire; after a small soldering job to repair the radiator, the party headed south toward the Great Smoky Mountains. The established pattern of squabbling over routes continued. Many roads of dubious character were followed. Consequently, one of the party's six vehicles often became mired in the mud, and off went the famous travelers to negotiate at nearby farms for the loan of chains and mules. One moun-

Navigator Edison took ribbing from all, including Desperado Ford, for the bone-rattling routes he picked.

Former farmboy Firestone, got up in his city duds, tried his hand at cradling oats along the way.

Ford not only dabbled feet in creeks but bathed in them and needled Firestone, who insisted on hotel tubs.

tain woman who untethered her cow to provide the necessary tow chain must have been greatly surprised when she later received word that medical care for her crippled child would be paid for by Henry Ford.

Any community that got word of their pending arrival turned out en masse to see the foursome, cloaked in dust, and to clamor for speeches or contributions to local causes. And so there was one advantage to the group's unpredictable peregrinations. Every wrong turn that departed from the itinerary sent the caravan into little valleys and remote hamlets where anonymity prevailed. They were cheerfully boyish and ebullient as they purchased freshly made cider from a hillside orchard owner, paid a puzzled little girl too generously for her bucket of apples and descended on an unknowing farmer for the sake of "helping" him at the old art of cradling and bundling oats, a skill that Firestone and Ford only partly retained from their youthful days in the rural Midwest. Having dealt heavy-handedly with his crop, they paid the farmer for the privilege.

Around the evening campfires, literature, the Great War and politics came in for a considerable degree of attention. Burroughs and Edison debated the literary merits of *Evangeline* and *Les Miserables,* Emerson, Thoreau and Shakespeare (whose works ought to be translated into everyday language as far as Edison was concerned). Ford proclaimed John Burroughs' writing superior to that of any other author in history—which caused the naturalist to comment on Ford's lack of literary taste. Edison maintained that the "Huns are boneheads," and Burroughs boasted that the United States would achieve such a victory over Germany that "no German will ever want to think of war again."

The matter of food and how much of it the human body requires evoked the most heated arguments. As keeper of the commissary, Harvey Firestone had seen to it that food supplies were generous in quantity and gourmet in quality, providing a table to which Burroughs was totally unaccustomed and Edison totally opposed—or so he frequently said. "The luxuries of our 'Waldorf-Astoria' on wheels that followed us everywhere" had little attraction for Mr. Edison, Burroughs noted. "He eats so little that I think he was not tempted by the chicken-roosts or turkey-flocks along the way, nor by the cornfields and apple-orchards, as some of us were. . . ." Edison indulged in preaching to his fellow diners, inveighing against eating anything that had not been heated to 212 degrees F., food that was overly cold, and cane sugar in particular "because it makes crystals in the blood." Burroughs then reprimanded Edison for putting two

The author is a free-lance writer who lives in Washington, D.C., and whose special interests are conservation, outdoor recreation and history.

heaping teaspoons of sugar in his three or four daily cups of coffee. "O Consistency, thy name is not Edison!"

A probable explanation of the Wizard of Menlo Park's ability to make a meal out of toast and a cup of hot milk or hot water was his between-meals habit of munching on chocolate-nut candy bars and drinking pop. For his part, John Burroughs preferred caramels as snacks—to the dismay of Henry Ford, who announced that caramels were not decent food for a man of Burroughs age and, on one occasion, deliberately discarded the octogenarian's candy.

For the 1919 return to "Nature's Laboratory," Ford provided a "kitchen cabinet car" with a running board that carried a sizable gasoline stove. The vehicle's interior included a built-in icebox and a neat array of drawers and shelves to house food and dishes. All this was presided over by Sato, the Japanese cook, who doubled as chauffeur of his rolling kitchen.

There was also a heavy touring car mounted on a truck chassis that contained individual compartments for each tent, cot and set of bedding. There were trucks that transported the usual mountain of gear and advertised: "Buy Firestone Tires." And there was the press: newspapermen, photographers and movie cameramen. The procession that again headed into the Adirondacks, the Green and the White Mountains, before wending its circuitous route into Massachusetts and Connecticut, included 50 vehicles. The 1919 expedition had elements of a business trip, since Ford insisted on inspecting hydroelectric potential on land he had bought near Troy, New York.

Power for the people

Both Ford and Edison deplored the loss of energy that every undeveloped hydroelectric site represented. As Firestone put it: "Mr. Edison and he [Ford] would dam every suitable stream in the country just to get the power. I doubt if, on our trips, we ever passed an abandoned mill without Mr. Edison and Mr. Ford getting out to measure the force of the stream, inspect the old wheel and talk about ways and means of putting the waste power to work."

In the late fall of 1920 the four friends gathered very quietly at Yama Farms Inn near Napanock, New York, for a tree-chopping championship (won by John Burroughs), and then proceeded to Woodchuck Lodge for some of Burroughs' famous Brigand Steak (alternate chunks of steak and pieces of bacon and onion skewered onto a sharpened green stick and broiled over an open fire). In spite of a driving snowstorm, the group went along with Burroughs' custom of cooking and consuming the entire meal out of doors. It was a last memorable occasion for the foursome—Burroughs died suddenly the following March.

Gentle John Burroughs, whether felling a tree, helping Henry Ford pick the berries for a shortcake, or at ease aiming his Winchester, was group's most honored member, always seated at head of the table.

Later, during 1921, an elaborate tenting tour of Pennsylvania, West Virginia and Maryland was under way. It peaked at 16, including seven wives, one bishop, one President of the United States, his secretary and several secret service men, tailed by chauffeurs, cooks, assistant cooks and assorted attendants plus uncounted numbers of journalists, cameramen, publicity agents. Having recovered from a downturn in business through his recently concluded agreement with Ford to supply 65 percent of the tires for Ford's production line, Harvey Firestone was apparently determined to establish a new level of excellence as a host. He invited a friend, President Warren Gamaliel Harding, to join the vagabonds in Maryland, and he enlisted the catering assistance of his Aunt Nannie and the Ladies Aid Society of Columbiana, Ohio. These helpful women killed, cleaned and dressed 100 chickens and baked a grandiose collection of cakes and cookies for the camping party.

On July 21, a fleet of trucks stuffed with all these comestibles and 20 tents was joined by cars bearing five Firestones and four Fords, all heading out of Columbiana toward a rendezvous with Edison and his wife near Hagerstown, Maryland. When the cavalcade trailed into camp it was obvious that Edison had selected one of his more propitious sites, a meadow shaded by oaks and sycamores beside Licking Creek.

Upon his arrival, the President delighted members of the press by removing his coat, grabbing an ax and demonstrating his ability at chopping wood—supposedly in the interest of helping the cooking staff. He also posed for their cameras while drinking from a long-handled dipper, taking a turn at target practice, and greeting the local Methodist and Roman Catholic clergymen, who somehow just happened by the camp. It was Edison, independent as usual, who managed to rebuff Harding when Presidential cigars were being offered all around: "I don't smoke, I chew." Firestone also noted that "Mr. Edison does smoke a great deal, but he had the idea—I suppose—that he was not going to take a cigar just because the President offered him one. Mr. Edison does not take to everyone at once and does not pretend to." Harding won over the inventor by producing a plug of chewing tobacco from a hip pocket. Edison later conceded that "Any man who chews tobacco is all right."

As usual, the campground was well lighted, thanks to a portable power plant, but this year there was a new refinement: an electric player piano which provided music until the mosquitoes drove the President and his hosts to their tents.

Sunday morning presented an opportunity for Firestone to bring out the six horses he had had shipped by rail from Akron. The President was assigned to a Kentucky thoroughbred and the men had a canter before William F. Anderson, the Methodist Episcopal Bishop of Cincinnati, led noon services which featured *Rock of Ages* and a sermon with only slightly veiled criticisms of the League of Nations. Harding then left for Washington and the campers moved on into West Virginia and Pennsylvania for another ten days of "roughing it."

In August 1923, Harding's funeral at Marion, Ohio, brought the group together again. "The start of our 1923 voyage was sad," wrote Firestone. But spirits brightened during a brief stopover at Edison's birthplace in Milan, Ohio, where a brass band tootled a greeting in the town square.

The travelers moved on into Michigan, ferrying to the Upper Peninsula, where they tented at Iron Mountain, toured Ford's logging camps and sawmills, and

On 1921 trip, Henry Ford proved to skeptical chef that he could take the heat—cooking pancakes.

At request of President Harding (in front of tree), Methodist Bishop Anderson was imported from Ohio to hold service. Pious congregation includes the camping buddies, their wives and staff members.

After church, lunch was served in dining tent, complete with floral centerpiece and a lazy Susan. Mrs. Firestone (at Harding's left) chose to wear hat for occasion; most men appeared in shirtsleeves.

At outset Edison made a "no shaving" rule which Firestone ignored in a pair of long, long shorts.

inspected his Imperial Mine. They also tried out the new balloon tires that Firestone had begun producing. Edison was sold, but Ford wasn't converted to using them on his cars until much later.

It was Mrs. Henry Ford who attracted special notice during a foray into Michigamme. A group of girls from nearby Camp Cha-Ton-Ka, wearing cutoff overalls and stockings rolled to reveal their knees, turned out to greet the clan. Mrs. Ford, expressing strong disapproval, refused to give autographs to persons in such attire. Newsmen from Detroit immediately latched onto the "dimpled knee" controversy, but Mrs. Ford stood firm.

On their last joint expedition in 1924, Henry Ford hosted the gathering at his newly purchased Wayside Inn in Sudbury, Massachusetts. A taste for old buildings, furniture and farm equipment had led him to buy the 1686 tavern that inspired Longfellow's *Tales of a Wayside Inn*. In line with his long-standing affection for waterpower, he had promptly rebuilt the old flour mill and its overshot wheel. For this year's reunion he supplied homegrown produce as part of a new dietary regime of raw vegetables, raw milk and whole-wheat foods. He imported a pair of dancing teachers to instruct his guests in old-fashioned dances such as the Virginia reel, the varsovienne and the gavotte. And he held a picnic attended by 3,000 local people, complete with an exhibition of farming methods that ranged from ox teams to his latest tractors.

A junket through New England followed, highlighted by a visit to President Calvin Coolidge's homestead in Plymouth, Vermont. Coolidge conducted a tour of a nearby cheese factory along with a running commentary on cheese making. After they had tasted cheese at various stages of its ripening process, Edison, Ford and Firestone's son Russell all complained of upset stomachs.

The President presented Ford with his great-great-grandfather's maple-sap bucket, dating back to 1780. The bucket was duly inscribed with everyone's signature as the press recorded the event. But it was Edison who stole the day. Asked if "Silent Cal" would be elected President the following November, he replied: "Sure, if he don't let out too much oratory." Then he pulled out the compass which he had been using to keep the party traveling dead ahead and presented it to Mrs. Coolidge. Although the camping compatriots saw each other again on various occasions, their wanderings along back roads and their ponderings around campfires had come to an end.

Edison claimed to need little sleep and only in short naps, this one supervised by his wife.

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By John Blackmore

Community trusts offer a hopeful way back to the land

An old idea, which is used widely in India and Israel, is being put to test in at least 30 different places here

Pedro Castex checks the soil moisture on 40-acre farm near Lodi, California. He leases land from the Northern California Land Trust for 2.5 percent of its cost.

It was an American dream—with a few twists. In 1973 Pedro and Gloria Castex and their two children, political refugees from Chile, made their way to California, hoping to find a farm of their own. Virtually penniless and with very meager English, Pedro, 53, was told that at his age, with his resources and with the cost of land, his dream of a farm in California's Central Valley was a fantasy.

Five years later Pedro and Gloria and another couple are working their own 40 acres near Lodi. While his partner Mack Warner plows the back field, Pedro surveys rows of ripening corn (right). They had suffered two years of drought, followed by too much rain but now the crops look good and he sees a new life.

Their dream had come true because of the Northern California Land Trust, one of a growing number (currently some 30) of nonprofit groups being formed nationally to help people like the Castexes—with desire but no money—acquire the use of land. Community land trust organizers have set out to prove that if land is considered a community resource and made available to those who will use it well, the landless poor can find economic independence and the land itself can be preserved intact for the future. Rural farms and urban vegetable gardens, homesteading communities striving toward self-sufficiency, and whole new towns are coming into being on land held "in trust." The experience of the Castexes illustrates how the system works.

Castex first learned about American land trusts at a meeting called to help some elderly farm workers find a home. There he heard Steve Bridge, a retired carpenter and a founder of the Northern California Land Trust, explain. Foundations and individuals had put up $100,000. The trust, in turn, would buy property for a family or group that had the skills and ambition to farm, but not the money. Such a family or group would lease the land from the trust for an annual payment—in the Castexes' case, equal to 2.5 percent of what it cost the trust to buy it. Income to the trust would be used to buy more land and to promote the land trust idea.

Castex discussed the idea with friends, wrote to Bridge and met with the land trust board. Eight months later he signed a five-year renewable lease on what came to be known as the New Life Farm.

The lease is even more favorable than it sounds. The trust offered the Castexes an initial grace period of no payments until they got the farm under way. And the trust used its equity to borrow $10,000 for equipment and supplies.

The idea of diverting land from the marketplace to conserve its resources is not novel. Conservation trusts (SMITHSONIAN, June 1977), such as the Nature Conservancy and the Trust for Public Land, have had significant success in protecting some wilderness and natural areas and tracts of particular ecological importance. Community land trusts do not seek to prevent development altogether, but try to encourage development which demonstrates how to meet both the economic

John Blackmore, a writer and board member of Wartroot Trust, is working on a book about community land trusts.

Photographs by Ede Rothaus

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The eminent staff of the National Air and Space Museum calls on its unparalleled collection to present the story of flight in all its dimensions. Dramatic technological and historical achievements, famous aircraft, military aviation, supersonic flight, and ballooning are among the significant advances highlighted in the context of their respective periods. Field trips to the Museum and its preservation, restoration and storage facility at Silver Hill, Md., give enthusiasts the opportunity to view the finest and most varied collection of airplanes and spacecraft in the world from the Wright Brothers' original Kitty Hawk Flyer and Lindbergh's "Spirit of St. Louis" to the Apollo-Soyuz spacecraft.

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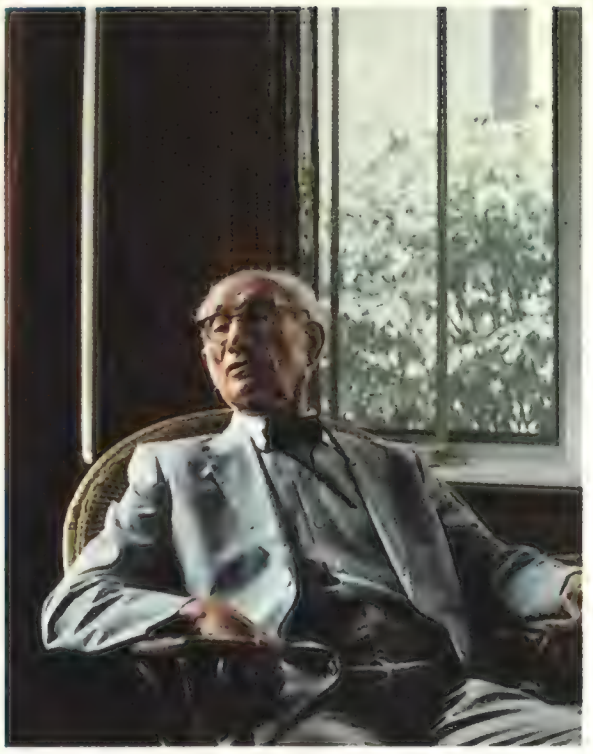

The late Ralph Borsodi co-founded Institute for Community Economics.

and social needs of a larger community.

The community land trust movement seeks universal land reform as its ultimate goal, but in nonviolent and noncompulsory ways. Land-trust proponents do not advocate government intervention to nationalize land—they prefer to acquire it through gift and purchase. Trusted land is not given outright; rather, it is leased so that the larger community can maintain some control over how it is developed. Land trusts typically contract long-term leases with users to guarantee their rights and security. Often these leases are automatically renewable and inheritable, and can be terminated only should the lessee leave the land or violate the agreement.

The man most closely associated with the beginnings of the community land trust movement is Robert Swann (p. 100), director of the Institute for Community Economics. Founded in 1967 by Swann and the late Ralph Borsodi (above), the Institute promotes their novel, and often heretical, ideas for worldwide economic reform: establishment of a global commodity-based currency, an international development bank to aid struggling farmers, and decentralized land control through community land trusts.

The conceptual basis for community land trusts stems from Borsodi's distinction between property and "trusterty," Swann explains. Property, according to this theory, consists of those things that

On Photographing the Invisible

To the naked eye, it was a Swedish 80-ore postage stamp. A rarity, and very valuable.

The camera, however, told quite another story. The stamp was a counterfeit.

Faint traces of tampering that were hidden to the naked eye were revealed by the camera. Someone, somewhere, had ingeniously altered the stamp by chemically removing a surprint. The stamp was worthless.

To the naked eye (left), the stamp was genuine. To the camera (right), it was a counterfeit. Note the faint, dark traces of tampering now revealed in the upper section.

What manner of exotic camera was this that could "see" the invisible?

The lens: one of the 20 in the Hasselblad arsenal, the 105mm Zeiss UV-Sonnar f4.3. Designed for photography within the ultraviolet portion of the electromagnetic spectrum, its costly quartz elements can detect radiations that are unseeable by the human eye.

It has peered at objects in outer space, examined forgeries, laid bare the secrets of counterfeit money. Not a lens for everyone, obviously, but an indication of just how awesomely comprehensive the Hasselblad System is.

The camera: an otherwise perfectly standard Hasselblad 500C/M, normally fitted with an 80mm Zeiss Planar f2.8 multi-coated lens.

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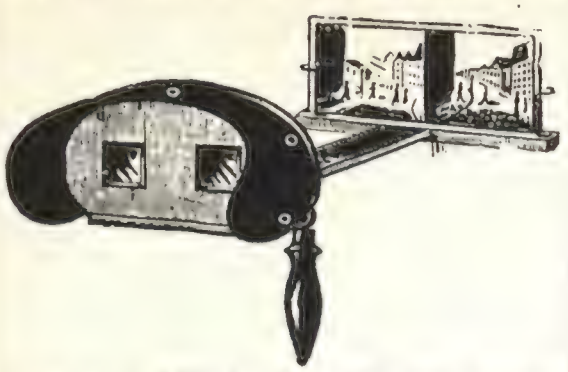

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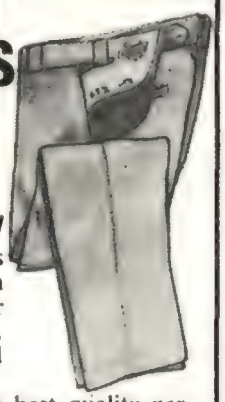

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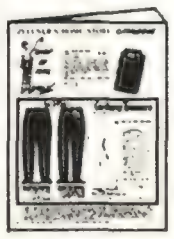

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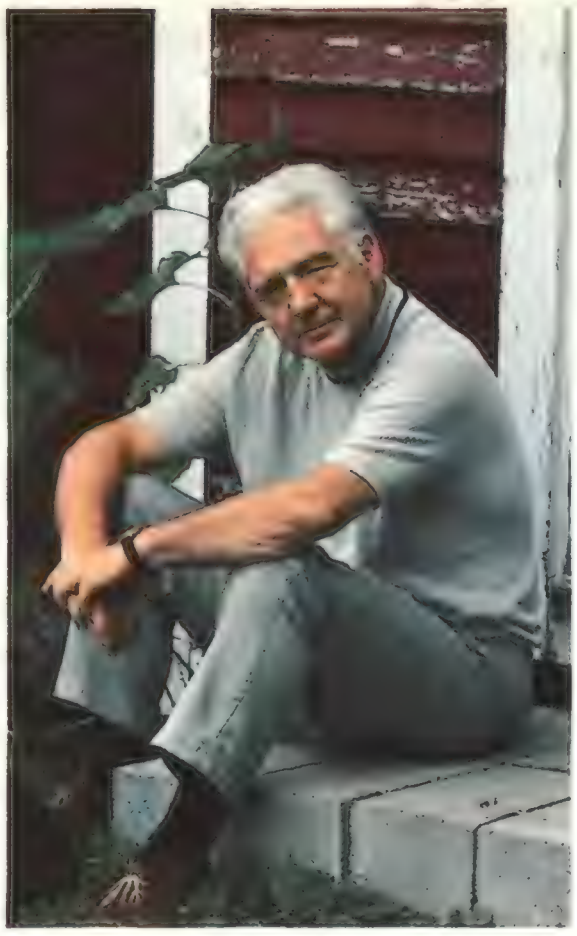

Robert Swann and his Institute once worked out of a barn in Massachusetts.

Man creates through his own efforts, while trusterty includes resources like land, the oceans and the atmosphere, which came into existence without human intervention. If trusterty is to be held at all, Swann argues, it must be held in public trust. Advocating community control over such resources, Swann and Borsodi proposed the formation of regional trusts to act as "stewards," or trustees, of land.

The ideas behind their stewardship concept are not original. In Great Britain, France and America, frequently visionary secular and religious leaders—Thomas Spence, Robert Owen, Charles Fourier and John Noyes among them—have in the past advanced the notion that land properly should be under community, rather than owner, control.

This tradition culminated in the work of Henry George, an American journalist and economist whose 1879 book, *Progress and Poverty,* inspired a series of social experiments and political movements here and abroad. George decried what he saw as the central problem raised by the Industrial Revolution: that as industrialization brings wealth to society, it also leads to increased poverty among the less fortunate. From his thesis that all wealth is ultimately based on the control of land resources, he proposed that poverty in an industrial society could be eliminated if all were given equal access to land.

Borsodi is credited with founding several new communities where versions of George's theories were put into practice. His interest in alternative forms of land tenure led him to India, where he studied the Gandhi-inspired *Gramdan,* or village land-gift movement, which set aside millions of acres for the landless poor. It was after his last meeting with *Gramdan* leaders in 1966 that Borsodi returned to the United States to found the Institute with Swann and lay the groundwork for the land trust movement in this country.

New Communities a base for blacks

In 1968, Swann and Borsodi had their first opportunity to help organize an American community land trust, New Communities, Inc. (pp. 106-107), in Lee County, Georgia. Through his contacts with the Civil Rights movement, Swann learned of a group of Southern leaders interested in providing a land base for rural blacks. With the Institute's sponsorship and support from the National Sharecroppers Fund, Swann and seven of the leaders went to Israel to study land acquisition and settlement practices there. The group returned enthusiastic about cooperative settlements.

Ten years later, New Communities, Inc., now operates a 5,735-acre cooperative farm near Smithville, Georgia—the largest black-owned single-tract farm in America. Although only 16 families gain their incomes from the farm, the members of New Communities are working hard to free the land from debt (they are about to sell 1,500 acres for refinancing) so that its resources can be used to build housing, schools, processing plants and other industries—the rudiments of a largely self-sufficient new town.

All of New Communities' 2,000 acres of tillable land are now under cultivation or in pasture; the rest are covered with forest and dotted with cypress swamps. The farm produces table vegetables, soybeans, grapes, corn, watermelons, pecans, peanuts, pork and beef.

Community land trusts organized since New Communities have explored many variations on the land-access theme. No single trust has settled more leaseholders

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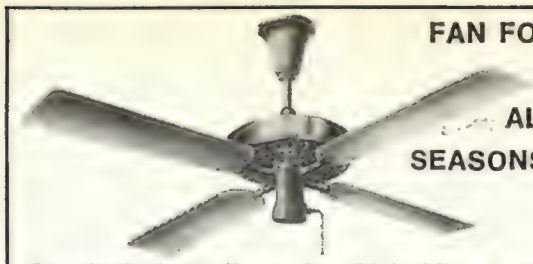

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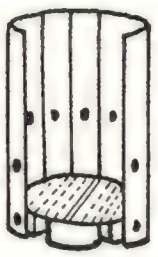

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Retired physicist Edward Ramberg helped start 70-family community in 1939.

on trusted land than Vermont's Earth Bridge Land Trust, where 35 people now share 14 leaseholds on five sites in four different towns. Earth Bridge's David McCauley reports eight new housing starts last year. "We want to keep it simple," says McCauley, whose salary comes from the American Friends Service Committee. "First, we're concerned with getting land into trust and getting it settled." Earth Bridge also sponsors community gardens and participates in a farmers' market.

Western Virginia's Wartroot Trust has focused on one particular tract, an Appalachian hollow (pp. 108-109), which its members hope to develop as a pure watershed system surrounded by farmsteads. Founder Ken Marion explained that the trust was formed as a demonstration to show how land conservation can go hand in hand with agricultural use. Still other trusts, such as the Oregon Women's Land Trust and the already-mentioned New Communities and Northern California trusts, were organized to provide land access to traditionally landless groups—women, black sharecroppers and migrant farm workers.

The people attracted to land trusts are an unusual multiracial mix of young and old, rich and poor, conservatives and ideological leftists. The common concern is the land. How can land be made to

"They reached Annapurna's summit at 3P.M. ...then their troubles began.
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Maine land trust built two-bedroom house for $28,000, aims for lower cost.

serve the most people? Many land-trust organizers, unsurprisingly, were part of the antiwar and racial integration struggles of the 1960s. But people with different outlooks are involved, too. A Vermont farmer overburdened with taxes and having no progeny to carry on; a conservative Maine lawyer who believes passionately in local self-determination; a forester who controls hundreds of thousands of acres of land and sees the waste of private woodlots going fallow—all are people who have been drawn to the land-trust movement.

If there are common themes, they are a love of the land, the feeling that too much of it is controlled by too few, a desire to take part in some decisions about land use, and a resistance to the idea that "the government" is going to do something about the diminishing amount of productive land.

The first statewide land trust organization, Maine's Sam Ely Community Services Corporation, was founded in 1972 to address the problems of hard-core rural poverty in that state. Named after an 18th-century New England land reformer, Sam Ely's original charter boldly proclaimed its intention "to acquire and liberate Maine land from traditional concepts of private ownership." Today "Sam," as its members call it, has evolved into twin organizations: the Community Services Corporation, which plans and implements the trust's programs, and the Maine Community Land Trust, an independent affiliate which holds perpetual title to the trust's acquisitions and keeps an eye to long-term nurturing of land.

Sam's first acquisition was a 36-acre

subsistence farm near Bangor. When it came into their hands, the gift of a dying young man, the group decided to offer it publicly on a first-come, first-served basis to a family in need. Fred and Sue Melvin a year later signed a 99-year lease on terms similar to those enjoyed by the Castexes in California. The Melvins have since planted a large vegetable garden and furnished a modest cabin for themselves and two children. They plan to clear some additional acreage for a small truck-farming operation, but until then Fred must work at carpentry.

A 33-acre property in North Monmouth, Maine, suggested a different use. Within commuting distance of two small cities, agricultural use was rejected in favor of developing a model rural subdivision. Four one-to-two-acre homesites were leased, with the remaining 28 acres in woodlot or common gardening land, which is leased collectively by the resident families. Monthly lease fees are $33 to $40. Two local banks have agreed to consider the leaseholds as sufficient equity for issuing home mortgages.

Seeing land access and easier home mortgages as only a first step, Sam has organized a team, Community Design and Development, to explore alternatives for low-cost housing. The group's first project, a prototype two-bedroom house (opposite) with such cost-reducing features as post-and-beam construction, passive solar heating and the use of native, rough-hewn timber, was recently sold for $28,000. The team has since built two other houses with the prototype design as the core unit, which they now estimate can be sold for under $20,000, a price that would make unsubsidized ownership a reality for an additonal 35 percent of Maine families.

Young and old save farmland

One of Sam's major initiatives in 1978 is the Farmlands Project. Concerned about the abandonment of farmland in Maine and the difficulties of young families, trust members have begun to contact Maine farmers considering getting out of the business because of age, high taxes and low profitability. Sam proposes to acquire such threatened farms at low cost by allowing the farmer to retain his home and some additional acreage as a life estate. Use of the remaining agricultural land would then be shared by

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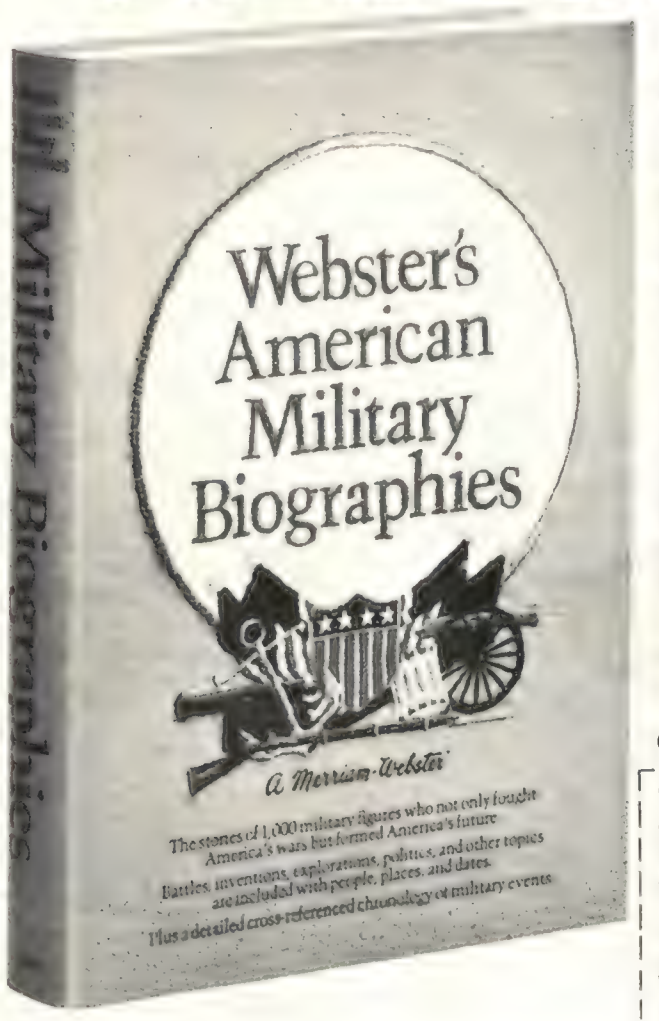
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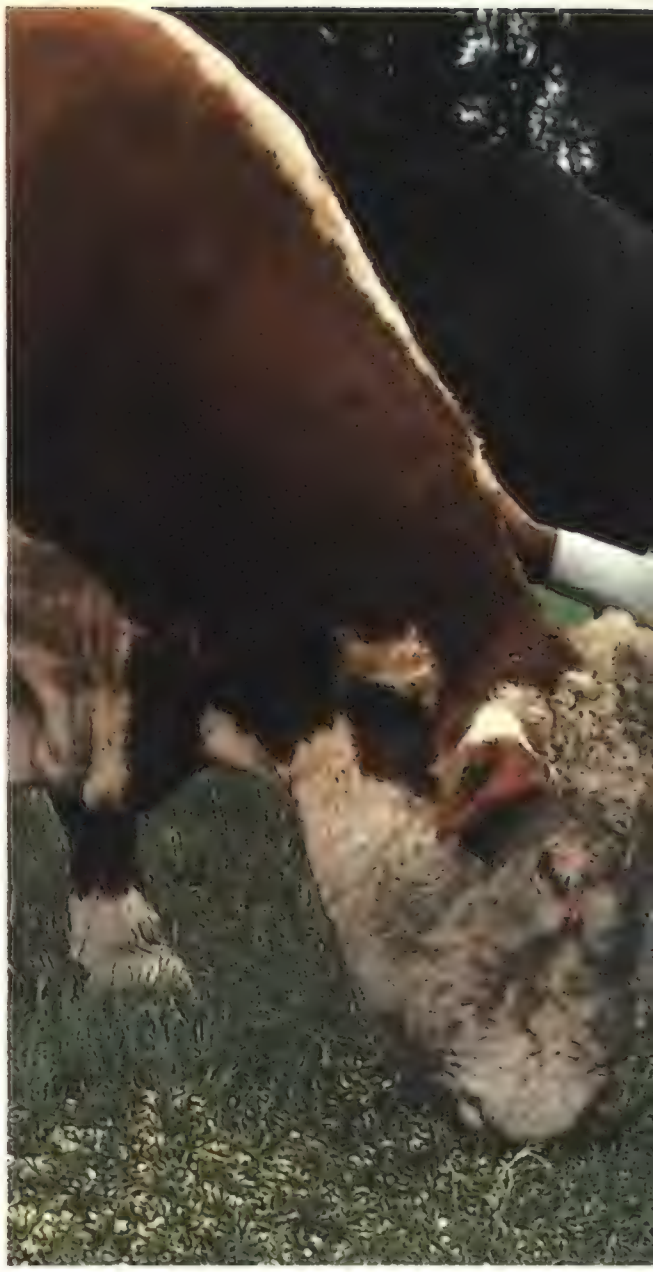

Stanley Harden, a director of New Communities, Inc., trust in Georgia, is in the farmer and a young family. The young partners would share the work, learn farming skills and, when the original owner retires, have the opportunity to take over the farming operation, which they would lease from the trust. Besides being able to keep his home, the original farmer would earn a steady income from the purchase arrangement as well as from the output of the farm.

Although most American trusts are concerned with rural, agricultural land, there is one group which addresses itself solely to urban land issues, the National Urban Land Program of the Trust for Public Land. At his San Francisco office, TPL president Joel Kuperberg produced numbers on the extent of wasted urban land. There are more than 20,000 vacant lots in Philadelphia, 45,000 in New York City and a whopping 100,000 in Los Angeles. Inner-city vacant lots like these are

charge of livestock. Sixteen families now earn income on this farm.

the focus of TPL's Urban Land Program.

In January 1976, TPL organized the Oakland Land Project to acquire unused lots and bring them under community control through neighborhood land trusts. In the largely black and Chicano portions of east Oakland, TPL found 941 vacant lots comprising 250 acres of potentially useful land. Trust workers contacted the owners of the more desirable ones and asked for land donations. In its first year alone, the project was offered 30 lots free of charge. The gifts netted their donors substantial tax benefits and relief from property taxes.

Before any parcel was accepted, the project staff determined whether the lot had any potential for community use and if its neighbors had interest in taking responsibility for it. Then the trust helped those interested form a committee to plan and implement whatever project they

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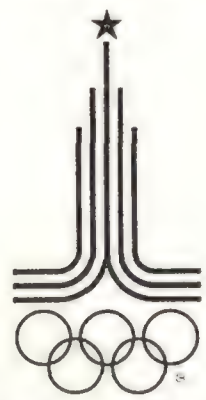

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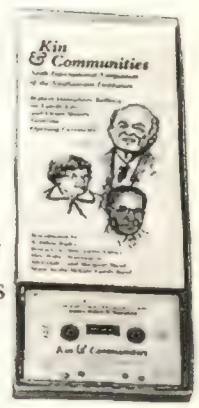

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chose. The TPL workers helped physically and financially (with foundation grants) to get the project going. The neighborhood committees are encouraged to incorporate as autonomous land trust organizations which take title to the donated lots.

So far, eight neighborhood land trusts have been incorporated in Oakland, each controlling three to eight parcels. Most of the lots have been developed as community gardens; a number have become parks, others have been cleared and planted as open space with community uses yet to be determined.

Following the successes in Oakland, TPL has initiated similar projects in South Florida, Newark, New Jersey, and New York City's South Bronx and Lower East Side neighborhoods, and it plans

Members of the Wartroot Trust on the Virginia-Tennessee border make do

others in Los Angeles and Philadelphia. "Unlike in Oakland, we operate not as community organizers, but as a response mechanism," explains Peter Stein of TPL's northeast office. "That is, we respond to requests for help from bona fide neighborhood organizations."

The community land trust movement is attempting what it considers to be land reform. Still in its infancy, and with only a small amount of land now held in trust, the movement has yet to have a profound effect on land tenure in this country. What these first community trusts have demonstrated is that the land trust idea lends itself to a broad range of social and economic applications and can be of help to those wanting to earn a livelihood from the land, but who lack the resources to do so.

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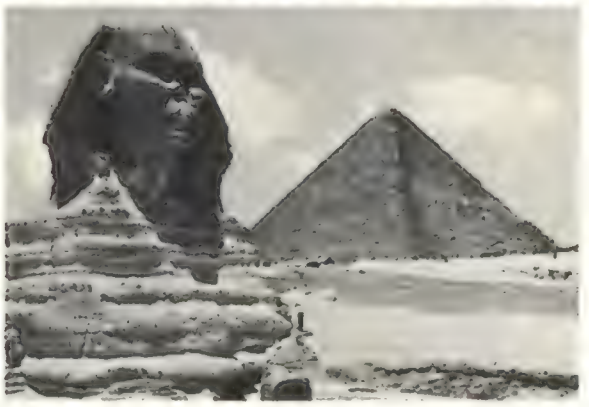

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Book reviews

Anyang
Li Chi
(University of Washington Press, $25)

The previously unknown Bronze Age beginnings of Chinese civilization—Chinese counterpart to the Sumerian city-states of ancient Mesopotamia, or the earliest Egyptian dynasties—were first revealed by ten years of excavation (1928-1937) at a site in North China near the modern city of Anyang, in Honan Province. Now, four decades after the close of the excavations he directed, and while the work of study and publication of the finds is still actively underway, Dr. Li Chi of the Academia Sinica in Taiwan has written a largely nontechnical account of the discovery of the earliest known Oriental civilization.

The clue that led Chinese archaeologists to the Anyang site was provided by the so-called oracle bones, fragments of bone and tortoiseshell incised with primitive, barely readable Chinese characters. Supplied by curio dealers, they were dismissed by some scholars as forgeries. Others, however, quickly recognized the oracle inscriptions to be not merely an earlier form of Chinese writing than any known before, but in fact official documents of a dynasty that had itself been considered legendary by more skeptical historians. Once having traced the oracle bones to their source in fields near Anyang, the Academia Sinica archaeologists soon realized that they were on the site of the last capital of the Shang dynasty, a city occupied for three centuries toward the end of the second millennium B.C.

The background of the excavations, the years of field work and the ensuing decades of patient study are all surveyed in careful detail in Dr. Li's book. It falls into two roughly equal parts: the first six chapters deal mainly with the excavations, while the remainder describe the ongoing work of Dr. Li's institute in its study of the Shang civilization. The first half is complete and self-contained, and these are the chapters that will be of greater interest to the general reader. The patience and determination of the archaeologist, his luck in stumbling on a sensational find, his elation at uncovering royal tombs and his disappointment at finding them already stripped by tomb robbers, all emerge faithfully from the author's measured account.

The second part, while it continues to chronicle the work of Dr. Li's institute, ceases to be the full story of Anyang archaeology; at the end of the Chinese civil war in 1949, the earlier finds were transferred to Taiwan, and followed there by many Academia Sinica members. Postwar archaeology at Anyang has been conducted by another Academia Sinica on

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the mainland. Americans saw a selection of recent finds included in an exhibition from the People's Republic that visited Washington, Kansas City and San Francisco in 1975 (SMITHSONIAN, September 1973, February 1975); and since Dr. Li's book went to press, there has come the spectacular news of an intact royal tomb, that of Fu-hao, consort of Wu-ting, one of the late Shang kings, at Anyang—the Chinese equivalent of Tutankhamun's tomb, and a stroke of luck that the earlier excavators were unhappily denied.

Dr. Li does not take into account the postwar discoveries—indeed, a thorough study of the new finds will occupy scholars for generations—and his interpretation of the earlier excavations is accordingly handicapped. Since Bronze Age sites even earlier than Anyang are now known, much of the author's discussion of the origins of Chinese civilization, based strictly on the Anyang material, seems beside the point.

On the other hand, Dr. Li's independence of viewpoints now common among mainland archaeologists and their Western followers can be a welcome antidote

Not illustrated in Dr. Li's book—bronze sculpture in the Anyang style, late Shang period (about 11th century B.C.), from the Freer Gallery collection.

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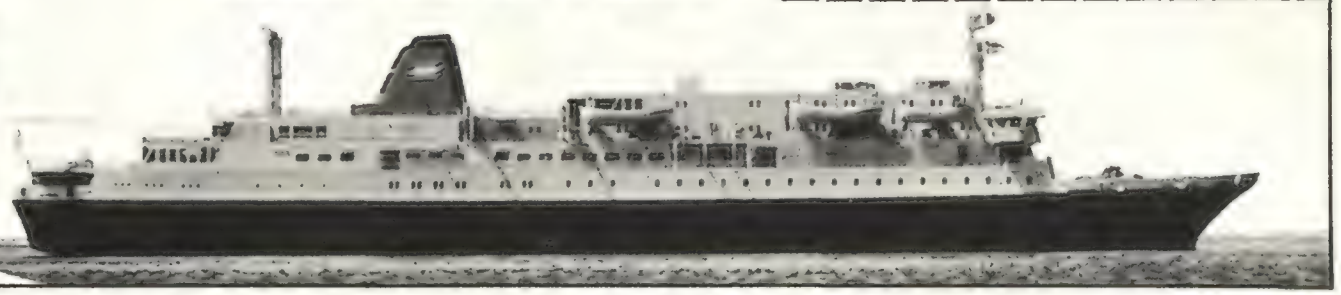

to doctrinaire interpretations, which at times seem to be inspired more by nationalistic enthusiasm than scholarly discretion. Such, for instance, is his relaxed acceptance of the possibility of Western influence in the formation of Chinese civilization—a viewpoint antique and out of fashion, but one resting on solid evidence that must sooner or later be given serious consideration.

Apart from one or two somewhat incoherent chapters on oracle inscriptions, and a short chapter on Shang art that hardly does justice even to the few objects it chooses to discuss, *Anyang* is a very readable general introduction to the early Bronze Age of China, offering much that has never before been available in English. Halftone illustrations and line drawings are numerous and clear, and the only real disappointment in the book is the 20 color plates, which range from poor to appalling. There can be little excuse for a publisher to issue such plates in a book sold at this price, or indeed at any price; better to omit them altogether.

—Robert W. Bagley
Department of Fine Arts, Harvard University

A World with a View: An Inquiry into the Nature of Scenic Values
Christopher Tunnard
(Yale University Press, $15)

For more than a century, Americans, privately or through government, have preserved Yellowstone and other natural areas and protected historic monuments such as Mount Vernon. For a decade, the country has supported programs to provide a clean and healthy environment. But no constituency has emerged for maintaining or improving the landscapes in which we actually live.

"What is too often missing from current resolves is a recognition of basic human esthetic needs," writes Christopher Tunnard, a widely known professor of city planning. "This book is concerned with that lacuna: the absence of an esthetic conscience in man's dealing with his environment. It emphasizes that care taken in future development is as important as the preservation or conservation of what exists."

A World with a View attempts to direct our vision to our surroundings. Tunnard looks less at particular buildings than at the historic neighborhoods to which they belong, and studies the valley where a river flows, not just the quality of the water in it. He reminds us of the precedents for concern with scenic values established in the science, art and gardens of earlier centuries.

To reawaken that concern, Tunnard takes the reader on a journey that, streamlike, meanders and digresses, quietly revealing the ways landscape has been seen, drawing upon examples from Massachusetts to Nepal, and many points between.

Above all, his interpretation is fresh. A chapter on science, for example, shows that "science is not hostile to the fancy and the imagination." It is the unthinking technological use of science—to produce junkyards, gravel pits, barren highways and sprawling suburbs—that makes us agree with an earlier generation that cast "maledictions on all dollar-godded utilitarians."

Art, too, has put scenery in the background. Where once Wordsworth fought plans to push railroads through the Lake District, painting and literature now have abstracted form from content. Tunnard's study of the role of cityscape and landscape in novels is particularly rich. No doubt his own work on design problems of suburbanizing America led him to discern the shift from 1920s accounts of the city-as-slum and the romance of small towns, to the revival of interest in the city by "beat" writers of the 1950s, who "carried it comfortably with them wherever they went."

Private gardens and botanical conservatories merit another chapter, one that traces the evolution from formal, geometric plantings toward *Sharawadji,* the "graceful disorder" thought by Europeans of the 18th century to characterize the Orient. Though the account of garden fashions reinforces Tunnard's message about the various perceptions of landscape esthetics, it is highly technical.

The discussion of "townscape" is more accessible, and perhaps more important. It is a current conceit, Tunnard argues, that wilderness and nature are the only proper subject for scenic protection. "The world untouched by man is a more modern myth," he says. Among the "odd ideas about landscapes" which we still have "is the image of town and country as discrete entities, which was only true in certain now-remote civilizations, and in its physical manifestations can now be found only in a few medieval relics, in France, say, or Spain. Certainly, the urban influence now continues throughout all distances. . . ." Landscape preservation and improvement need to be concerned equally with town and country.

Whether modern societies will cherish the esthetic environment, however, involves practical issues. Here, Tunnard's guidance disappoints. He does not connect the elite esthetic experiences described in earlier chapters—gentlemen scientists trading plant specimens, aristocratic gardens, the public squares constructed by kings—with the political and economic democracies of today. He believes, or rather hopes, that "All elements of society must come eventually to realize that scenic values are an essential part of the cultural life of nations, that their desecration is a crime against the people, and that they can be cherished and enhanced only by the development of esthetic judgment."

That is a worthwhile aspiration, perhaps, but Tunnard too easily sends into a busy world the scenic values that he holds. Are there enough people of good taste to carry out the work he proposes? Are not political and economic policies, directed by an elite, needed to supplement charitable work on behalf of landscape programs? Desirable though they may be, Tunnard's world with a view and the sensitive citizenry needed to support it are not yet clearly in prospect. His book will raise understanding, but only if the people debating today's housing and tomorrow's highways can be made to listen.

—John S. Rosenberg
Free-lance writer and critic

Rockdale The Growth of an American Village in the Early Industrial Revolution
Anthony Wallace
(Alfred A. Knopf, $17.50)

"There is a village in America called Rockdale where the people used to manufacture cotton cloth," Anthony Wallace writes at the opening of this large history of life and labor between 1825 and 1865 in the mill hamlets set into the hillsides along a three-mile stretch of Chester Creek in Delaware County, Pennsylvania. Rockdale was then an industrial community of 2,000 souls who made their livings in the machine shops and in grist, saw, paper and cotton mills (of which there were seven), around which the hamlets had developed.

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Wallace began his research for the best of reasons: Rockdale is his home and he was curious about the early 19th-century buildings—some still used as industrial sites.

He found that the mill owners and craftsmen, disciples of evangelical Christianity, had pitted themselves against the heirs of Enlightenment liberalism and Robert Owen's Utopian socialism in a struggle for control of the machinery of the Industrial Revolution and for the souls of the workers.

They won the battle, and their victory had universal implications. In Wallace's judgment, evangelicalism, "allied with Western economic and military power, was driving the industrial nations toward the conquest of the world."

Rockdale thrived during the pastoral phase of American manufacturing. Dusty and unhealthy though they may have been, Rockdale's mills were not dark and satanic. The power looms that operated in nearby Philadelphia did not reach Chester Creek, where water-driven wheels provided self-renewing energy and production had to remain in proportion to local resources. Readers may listen for the click and clank of gears and cranks of the throstles and mules that stretched, twisted, wound and wove yarn and cloth out of slave-picked cotton from Georgia and the Carolinas.

Wallace has drawn his material from diaries, memoirs, letters, ledgers, newspapers and hundreds of secondary sources. The scholarly apparatus is there, helpful to scholars, but it is not intrusive. General readers will find Rockdale a humanely written and sympathetic book.

No two characters better personified the opposing sides in Rockdale's ideological conflict than did John Crozer, patriarch of the evangelical party, and John Phillips, an admitted "infidel." Crozer reckoned himself to be God's steward, responsible for the husbanding of the considerable fortune that had come to him as if by divine grace. The Byronic Phillips courted the daughters and sisters of his fellow mill owners in Rockdale and Brandywine to win a wife and conclude an industrial alliance, but time and again he was spurned by the evangelical sisterhood for his lack of religion. Wallace follows the friendship of two of that sisterhood, Clementina Smith and Sophie du Pont, through years of a correspondence that provides some of the clearest insights into the collective personality of the managerial class of which Crozer and Phillips were the leaders. Cosmopolitan and secure in a sense of its own importance, it was an oligarchy of a dozen families, led by self-made men, for whom capital formation was a creative art. A feeling of mutual dependence and even respect existed between the mill owners and Rockdale's working class, which got good pay—for a 72-hour work week. The nuclear family was of crucial importance to millworkers for whom marriage was an economic partnership. Food was cheap and rent low in Rockdale, and, with both parents and children earning wages, money could be put aside to buy, finally, that farm in Ohio.

The failure of the strikes of 1836 and 1842, and the hard times that followed the financial panic of 1837, combined to defeat for a generation efforts to form trade unions at the Chester Creek mills. The 1840s and 1850s witnessed the steady depoliticizing of the Rockdale workers, and evangelical capitalism's rise to uncontested ascendancy in the community —and in the country.

Solidly Republican, the Rockdale evangelicals had by 1860 preempted sponsorship of all the worthy causes, including restriction of child labor and introduction of the ten-hour workday. Profit and salvation were both to be found in mills that would be "nurseries of morality, industry, and intelligence."

Forty years in the Rockdale community was time enough for a boy to be instructed in its Sunday school and to take a job in one of its mills, to become a man and establish a family, and to grow to graying maturity as a worker. For Anthony Wallace, the experience of picturesque Rockdale—one hesitates to say idyllic—is typical of the early industrialization of America, and his arguments in support of that proposition are persuasive. How typical of those in his station, one still must ask, was John Crozer, that fitting model of the Rockdale operatives, when he agonized over abandoning the hamlet of Knowlton after the Great Flood of 1843 had washed away the mill there? "I really feel an interest in my people, an affectionate interest," he wrote in his diary, "but I suppose few or none of them think so, or are aware of it."

—Robert Rinehart
Historian at American University

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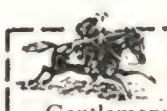

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Additional reading

Diaspora (p. 32)

The Jews of Ancient Rome by Harry Leon, Jewish Publication Society of America (Philadelphia), 1960

The Israelites by the Editors of Time-Life Books, 1975

Jewish Symbols in the Greco-Roman Period by Erwin Goodenough, Pantheon Books, 1953

Catalogue of the Jewish Museum, London edited by R. D. Barnett, New York Graphic Society, 1974

National Gallery (p. 46)

National Gallery of Art, Washington by John Walker, Harry N. Abrams, 1976

A Standard of Excellence: Andrew W. Mellon Founds the National Gallery of Art at Washington by David Edward Finley, Smithsonian Institution Press, 1973

"A step by step guide to designing" by J. Carter Brown, *Potomac* magazine, *Washington Post,* May 16, 1971

Self-Portrait with Donors: Confessions of an Art Collector by John Walker, Little, Brown, 1974

Dresden collection (p. 56)

The Splendor of Dresden, catalog of the exhibit, Metropolitan Museum of Art, 1978. Box 255 Gracie Station, New York, New York 10028. $6.95 each, $1.25 postage, NYC residents add 8 percent sales tax, NY state, 4 percent.

Brain (p. 64)

"The Brain's Own Opiates" by Solomon H. Snyder, *Chemical & Engineering News,* November 28, 1977

"Opiate-Like Substances in Brain May Hold Clue to Pain and Mood" by Harold M. Schmeck jr., *New York Times,* October 2, 1977

"The Brain Takes Its Own Narcotics!" by Richard Restak, *Saturday Review,* March 5, 1977

The Puzzle of Pain; Revolution in Theory and Treatment by Ronald Melzack, Basic Books, 1973

Doñana (p. 72)

Portrait of a Wilderness: The Story of the Coto Doñana Expeditions by Guy Mountfort, Hutchinson of London, 1958

Doñana by Juan Antonio Fernández, Taplinger (New York), 1975

"An Ecological Sketch of the Coto Doñana" by Don Antonio Valverde Gomez, *British Birds,* January 1958

Wild Spain by Abel Chapman and Walter J. Buck, Gurney and Jackson (London), 1893

Iron age (p. 80)

Iron Age Communities in Britain by Barry Cunliffe, Routledge & Kegan Paul (Boston), 1974

Archaeology by Experiment by John Coles, Charles Scribner's Sons, 1973

Metallurgy in Archaeology: A Prehistory of Metallurgy in the British Isles by R. F. Tylecote, E. Arnold (London), 1962

Ford camping trips (p. 88)

Men and Rubber by Harvey S. Firestone and Samuel Crowther, Doubleday, Page & Co., 1926

Under the Maples by John Burroughs, Houghton Mifflin, 1921

Harvey Firestone: Free Man of Enterprise by Alfred Lief, McGraw-Hill, 1951

Community land trusts (p. 97)

The Community Land Trust: A Guide to a New Model for Land Tenure in America by Robert Swann, Institute for Community Economics (Cambridge, Massachusetts), 1972

The People's Land: A Reader on Land Reform in the United States edited by Peter Barnes, Rodale Press (Emmaus, Pennsylvania), 1975

Commitment and Community: Communes and Utopias in Sociological Perspective by Rosabeth Moss Kanter, Harvard University Press, 1972

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Smithsonian highlights for the summer

Outside on the Mall people are dashing between museums, picnicking on the grass, walking in the Hirshhorn Sculpture Garden, waiting for a ride on the carousel, climbing the dinosaur and simply lolling. It is hard to remember that ice sheeted the grass in March and there was little activity out there in the open. Closed doors kept the museums' music and enticements inside. Now music spills across the Mall, drawing children to the antique carousel. The scent of flowers attracts strollers to the Victorian Garden. There is a fine tension between the spontaneous festival of activity outside and the cache of treasure stored in each of the Smithsonian museums: paintings, sculpture, jewels, archaeological artifacts, whirling machinery, antique cars, renowned airplanes and delicate porcelain vases.

The museum staffs are working to enhance the festive atmosphere. A Boomerang Festival, sponsored by the Smithsonian Resident Associates, June 3-10, ends in a competition in West Potomac Park. A long weekend of music, dance, crafts and storytelling celebrates July 4 at the Museum of History and Technology. The Museum of Air and Space closes the season with a Frisbee Festival on Labor Day weekend.

Kaleidoscope Day will tempt families indoors for a festival June 3 at the National Collection of Fine Arts. Artists will demonstrate and teach skills that range from batik dyeing on paper to the creation of paper hats. In addition to festivals, the season allows one exhibition to take up residence outside.

If you catch sight of a rainbow atop the Air and Space museum, it is not your imagination. It is part of a large and fantastic project called Centerbeam, a museum-size exhibit that crosses art and technology. This Massachusetts Institute of Technology creation will be in place all summer, east of the Air and Space Museum, and will bounce presentations off the museum. Included in the exhibition: balloon sculptures to soar; projections, gadgets and music to entertain; moving and touchable pieces.

The terrace at History and Technology will be the stage for lunchtime concerts and early-evening concerts on Wednesdays and Thursdays throughout the summer. At the plaza in front of the National Portrait Gallery, music at lunchtime will be offered on Wednesdays at noon by "Streets for People."

Each museum presents special exhibitions for summer guests, and new galleries have opened. For schedules of films and lectures and news of very recent exhibit changes, check as you enter with the well-informed volunteers at the information desks in each museum. For a complete description of the museums and permanent collections, you may purchase a copy of the *Official Guide to the Smithsonian* in one of the gift shops located in every museum. When you arrive in the area of the Smithsonian museums, walk to the center of the grassy Mall, which stretches between the Capitol Building and the Washington Monument. Look around. Orient yourself. On small billboards in front of each museum you will find a map and directory of the buildings. The main Smithsonian Visitors' Information Center is located in the building that looks like an ancient castle. Inside the Great Hall of the castle, you can see a three-minute slide show that will help you plan your visit.

Activities for children

Simulators, Air and Space Museum
New flight simulators in the recently opened General Aviation Gallery will have children and their parents racing to take the pilot's seat (see p. 18).

Flying for Fun, Air and Space Museum
An exhibit of pilotless craft stresses kite flying, soaring, sky diving and model planes. (Opens July 1.)

Children's art workshop and film festival, Anacostia Neighborhood Museum
Pre-register through June 30 for July arts program, which includes field trips to other museums and classes in arts and crafts. Free children's films each Friday at 10 A.M. through July.

Explore Gallery, National Collection of Fine Arts
Children are welcomed here in their own special gallery, complete with bright colors, various touchable textiles and pedestals for posing.

The Carousel
The beautiful and enticing 55-year-old carousel offers rides for children and adults, 35 cents each, from 10 A.M. to 5 P.M. daily during the summer. It is located near the Arts and Industries Building and its music comes from an original Wurlitzer organ.

Double-decker it to Gallery Place
Leave the Mall area to reach the National Portrait Gallery and the National Collection of Fine Arts via old-fashioned

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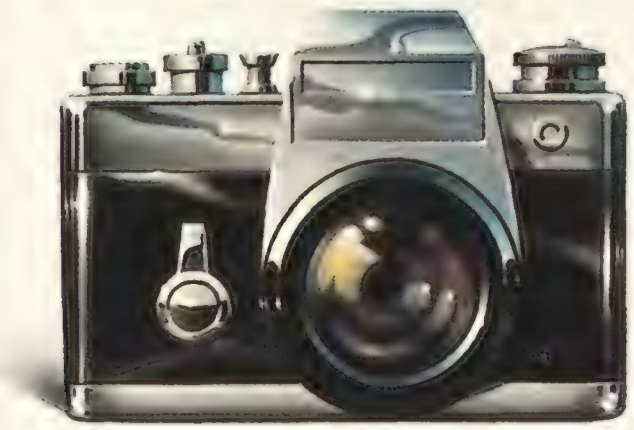

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double-decker buses. The buses leave from the Museum of History and Technology hourly, 10:30 A.M. to 4:30 P.M.

Insect Zoo, Museum of Natural History
Live butterflies, bees, ants, praying mantises and crabs are displayed in a 60-foot terrarium, demonstrating how insects inhabit a small area of woodland. Smaller terrariums show off peskier insects.

Discovery Room, Museum of Natural History
Children are given the chance to touch and discuss bones and fossils, arrowheads and crystal fragments, seeds and beads.

Discovery Corners, Museum of History and Technology
"Spirit of 1776" offers Revolutionary costumes for children to try on. "Electricity Corner" makes Ben Franklin's experiments come alive.

Toy exhibits, Museum of History and Technology
The fully furnished Bradford Doll House is the star of the 19th-century toy collection, which also includes dolls, games and toys in the Hall of Everyday Life.

Summer evening hours

From Memorial Day through Labor Day, six of the Smithsonian museums on the Mall are open until 9 P.M. The National Zoological Park also keeps open later (6 A.M. to 8 P.M., buildings open 9 A.M. to 6 P.M.) in summer.

During evening hours crowds tend to be smaller and therefore the pace more leisurely. There are no lines waiting to view films, make purchases in the museum shops or buy meals. Probably the biggest advantage of an evening visit is the ease of finding a parking spot.

The following buildings are open seven days a week from 10 A.M. to 9 P.M.: Smithsonian castle, Museum of History and Technology, Museum of Natural History, Hirshhorn Museum and Sculpture Garden, Arts and Industries Building and the Air and Space Museum. The Renwick Gallery, National Portrait Gallery, the Freer Gallery and National Collection of Fine Arts are open 10 A.M. to 5:30 P.M. daily. The Anacostia Neighborhood Museum is open 10 A.M. to 6 P.M. weekdays, noon to 6 P.M. weekends.

Permanent collections and summer shows

National Portrait Gallery
An exhibition of *Time* magazine covers is the featured attraction here this summer. A selection of 107 covers of 100 figures over the past two decades will continue through August 30.

The museum is located nine blocks from the Mall. A free double-decker shuttle bus runs between Constitution Avenue entrance of the Museum of History and Technology and the Fine Arts and Portrait Gallery, 10:30 A.M. to 4:30 P.M. The Gallery Place Metro stop is the place to exit if you use the subway. Several buses stop near the museums on F street.

National Collection of Fine Arts
A major retrospective presentation of the museum's collections, "Past and Present: a century and a half of a National Collection," opens June 11 and continues until September 4 (examples, left and right). A show of the museum's "Recent Acquisitions" will continue through the summer. The permanent collections of the National Collection of Fine Arts offer a panorama of painting, sculpture and graphic art in the United States from its beginnings to the present.

The gallery is located at 8th and F Streets N.W. For information on directions, see listing for Portrait Gallery.

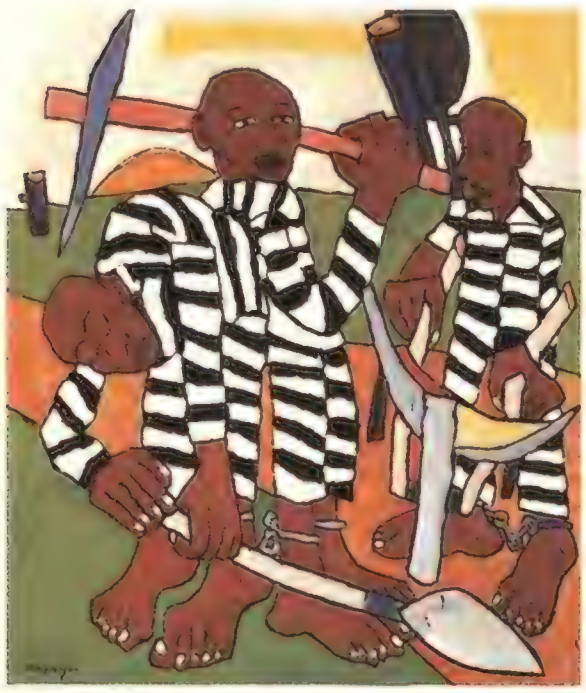
Freer Gallery of Art
An exhibition of Oriental ceramics from its collection is the Freer's summer gift to visitors. This includes Japanese, Chinese and Korean ceramics.

Oriental and Middle Eastern paintings, scrolls, fans and 19th-century American paintings are a part of the continuing show here. The tranquil Peacock Room designed by James Whistler is a good place for a short rest stop.

The Smithsonian Institution Building
A special exhibit "The Federal City: Plans and Realities" provides a record of the history of city planning and construction in Washington. The red sandstone castle, original Smithsonian Building, completed in 1855, houses an Associates Reception Center.

Arts and Industries Building
The show "1876: A Centennial Exhibition" takes you back 100 years to the Philadelphia Exposition with steam engines, working machinery and fashions, silver, crystal and china of the day. Guides in period dress demonstrate musical instruments and machinery. The Victorian Garden, with elaborate plantings and ornamental furniture, adjoins the building.

Hirshhorn Museum and Sculpture Garden
This summer works by Picasso, Matisse, Cézanne and Van Gogh are displayed,



Chain Gang by William Johnson, 1939, is part of "Past and Present" show.

Roger Brown's *World's Tallest Disaster*, 1972, part of summer show at NCFA.

part of the exhibition "Noble Buyer: John Quinn, Patron of the Avant-Garde." The show brings to Washington the most important modern art collection assembled in America in the Twenties.

The museum holds in its own collections some of America's finest modern art. The sunken sculpture garden is across Jefferson Drive from the museum.

Air and Space Museum
Recently opened galleries include one on General Aviation and one called "Flying For Fun" (opens July 1) featuring kiting, soaring, hang gliding. The Museum presents a dramatic and highly popular film, "To Fly," daily at 45-minute intervals during opening. A fine planetarium show, "Cosmic Awakening," impresses the audience with reality of known worlds in the solar system. Both presentations charge 50-cents admissions.

Silver Hill Museum
The Silver Hill aviation preservation and restoration complex is opened for guided tours at 10 A.M. and 2 P.M. Tuesday through Saturday. Reservations are required two weeks in advance.

Museum of Natural History
The Rise of Western Civilization Hall contains thousands of archaeological specimens from 15,000 B.C. to A.D. 500; a Roman mosaic from Carthage; two bull mummies from Egypt; re-creations of 5,000-year-old tombs; a Middle Eastern bazaar and an early farming village. The Hope diamond is on permanent exhibition in the Gem Hall. The Hall of Dinosaurs helps tell the story of how living things evolved on this planet.

Museum of History and Technology
"Aspects of Art and Science" brings together 71 objects from major museums in America and Britain to illustrate the collaboration common between scientists and artists, through August.

The "Nation of Nations" exhibition tells the immigrants' tale and displays examples of ethnic influence on American life-style. The Hall of Maritime Enterprises (opens in July) traces the history of the shipping industry from clippers to luxury liners. The First Ladies Hall presents a lesson in changing fashion.

Renwick Gallery
The pottery of a renowned Indian family

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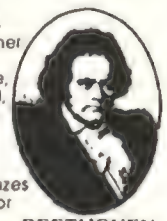

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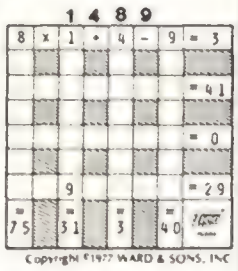

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is displayed as "Maria Martinez: Five Generations of Potters" through August 13. An exhibition of blown glass that features applied hot glass decoration, "Dale Chihuly: Recent Glass," opens on July 21 and will run until November 12.

The Gallery is located at 1661 Pennsylvania Avenue N.W. Metro buses 30, 32, 34 or 36 stop near the gallery or use subway stops at Farragut Square.

Anacostia Neighborhood Museum
"Phil Ratner's Washington," an exhibition of sculptures, stained glass, tapestries and sketches, continues through the summer. The show presents the nationally acclaimed work of a 20-year veteran art teacher at Anacostia High.

The museum is located at 2405 Martin Luther King Avenue S.E. Buses A2, A4 and A8 can be caught on 4th Street near the Air and Space Museum.

National Zoological Park
The white tigers, pandas, kiwis and the national hero Smokey Bear make the zoo their home. Bright graphics provide orientation and direction.

The National Zoo is located at 3000 Connecticut Avenue, N.W. Take an L2, L4 or L6 bus from 13th and Pennsylvania Avenues, N.W.

And in New York, the Cooper-Hewitt
Two exhibitions of embroidery will be on view this summer at the National Museum of Design, June 6 to September 2. One of the exhibitions is drawn from the Cooper-Hewitt collections, the other from the Musée des Arts Décoratifs, Paris.

Traveling Exhibition Service
The Smithsonian is constantly circulating exhibitions to hundreds of cities throughout the country. For a list of shows and locations write: Eileen Harakal, SITES, Smithsonian Institution, Washington, D.C. 20560.

Special education facilities
Audio presentations, captioned presentations, tours, touchable objects and braille guides are available in many of the museums. Wheelchairs are available inside each of the museums and wheelchair access is possible into the buildings and between floors.

The education offices in each museum can provide special arrangements for the handicapped; please call ahead.

When visiting the Smithsonian

Members are invited to begin their visit by registering with the Associates receptionists in the Smithsonian Institution Building—the castle on the Mall. Here, between 10 A.M. and 4 P.M. daily, Associates receive special orientation materials to ensure a more enjoyable visit. Membership cards are replaced upon presentation of a SMITHSONIAN magazine address label. Here, too, the Associates Lounge offers a haven in which to relax. To aid in trip planning, members are encouraged to send a postcard or phone for an information packet: Associates Reception Center, Smithsonian Institution, Washington, D.C. 20560; (202) 381-6264.

The Court
The Court, a restaurant for Associates only, located in the Museum of Natural History, offers buffet-style service at breakfast, luncheon and dinner. Hours: Brunch, 8:30 to 11:30 A.M. (entrance via Constitution Avenue); luncheon, 11 A.M. to 3 P.M.; dinner, 4:30 to 7 P.M. Brunch is $2.95 for adults and $1.80 for children; luncheon and dinner are $3.95 for adults and $2.80 for children. Membership cards required for service.

Food and picnic facilities
The Mall, grassy grounds around the Museum buildings, and certain areas at the Zoo are good for picnicking. Bring your own or purchase a lunch from the stands, mobile carts or one of the museum dining facilities.

Parking and Public Transportation
Parking downtown is limited and finding a space is sometimes a frustrating ordeal. Commercial lots on or near the Mall include the garage under the Air and Space Museum on 7th St. S.W. (7 A.M. to 10 P.M.), the L'Enfant Plaza garage (open 24 hours) and an area on Maryland Avenue between 6th and 7th Streets S.W. A few free spaces are available on Jefferson and Adams Drives after 10 A.M.

To avoid the difficulties of finding a space, please leave your car at home or in one of Washington's fringe parking lots and use public transportation. The new subway system has 20 miles of weekday service around Washington and to the Maryland and Virginia suburbs. Metrobus also offers service to the Mall.

—BONNIE GORDON

Exploring the World with the Smithsonian

For both the seasoned and would-be traveler, the Smithsonian has developed a travel program to meet a variety of tastes and budgets. In order to accommodate the increasing growth and interests of Smithsonian Associates, the tour programs have expanded, bringing travelers to places reflecting the Institution's interests.

Three types of trips are available, Charter, Domestic and Study, each with its distinct character. Foreign Study Tours provide small groups with culturally oriented, specialized trips, under the guidance of museum curators or experts in respective fields. Foreign Charter Tours, consisting of several small groups under the leadership of skilled guides and interpreters, are lower in cost, combine study, discovery and vacation. Domestic Tours offer specialized guidance and expertise generally unavailable to persons traveling on their own.

Foreign Charter Tours

Paris and Provence*—September 4-18: Paris plus Avignon, Arles, Nîmes and Aix-en-Provence; museum seminars at the Louvre and the new Pompidou center; walking tours of the islands of the Seine; excursions to the Loire, Chartres, Reims.

Japan—November 5-21: The heart of historic Japan with an extended program in Kyoto and Nara followed by choice of travel seminars to the Inland Sea, the Sea of Japan or Kyushu. Conclude in Tokyo with visits to Nikko or Kamakura. Visit ancient temples, castles and shrines with expert study leaders. (Originates and ends in San Francisco.)

New Zealand and Fiji—November 17-December 5 or February 21-March 11: Departing Los Angeles, this tour includes Mt. Cook, Te Anau and Milford Sound, plus Auckland, Rotorua, Wellington and Christchurch. Included will be talks on New Zealand's natural history, Maori heritage, parliament, plus a home visit. Brief rest stop at Fiji before return flight to the West Coast.

Winter Russia *—December 28-January 11, 1979: Leningrad, Tallin and Moscow plus optional two-day excursion to Vladimir and Suzdal; attend special winter festivities including gala New Year's Eve party; life-seeing visits to schools, factories or clinics; attend Russian theater and circus.

Low cost of tours includes first-class hotels, most meals, sightseeing, lectures, theater tickets and air fare. *Optional predeparture course will be available.

Write Smithsonian Associates Travel Program, A&I 1278, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635 for brochures on specific tours.

Domestic Study Tours

High Sierra Camping—July 15-24: Explore California's Sierra Nevada by four-wheel drive vehicle; study the area's natural history, including the bristlecone pine, which survives as the oldest living thing.

Desolation and Gray Canyons—July 23-August 2, September 29-October 9 or October 10-20: White-water trip for the adventurous; explore the geology, wildlife and Indian and outlaw history of Utah's Green River.

Wind River Mountains—July 29-August 6: A horseback trip into the land of mountain men. Camp at 10,000 feet among turquoise lakes and high-meadow wild flowers.

Williamsburg Family Weekend—August 10-13: A repeat of our popular program for children ages 7 through 14 (and their parents) to learn about 18th-century life through participation in special tours.

Annapolis, Winterthur and the Brandywine Valley—August 12-20: Focusing on architecture, furnishings and decorative arts, visit the world-renowned collections at Delaware's Winterthur Museum. Explore the restored 18th-century towns of the Brandywine Valley and Maryland's Eastern Shore.

Canadian Rockies—September 7-17: Meet in Vancouver for an overnight train trip to Lake Louise. Discover Alberta's scenic beauty and natural wonders on daily hikes at Lake Louise and Banff Springs.

Toronto—September 19-25: Special program of museum lectures and walking tours to experience the exciting diversity of this city's art and architecture. Also visit Stratford Shakespeare Festival and Niagara Falls.

Weekend at the Hirshhorn Museum and Sculpture Garden—September 22-24: A weekend devoted to the Hirshhorn's exemplary collection of 20th-century painting and sculpture, with films, walking lectures and discussions.

Mesa Verde and Chaco Canyon—September 24-October 2: Enjoy autumn colors in the Southwest while learning about the history of the Pueblo Indians through visits to important archaeological sites and Canyon de Chelly, Arizona.

California Wine Country—October 1-7: From San Francisco, visit selected vineyards in Napa, Sonoma, Santa Clara and Monterey with wine tasting and special lectures by vineyard owners and discussions with wine masters.

Illinois Archaeology—October 14-21: Join archaeologists in the excavation of an Illinois River valley site spanning almost 10,000 years. Actual digging will be supplemented by instruction, lectures, laboratory work and field trips.

Washington "Anytime" Weekend: Choose any weekend to visit the nation's capital and enjoy a special tour of the original Smithsonian building, spend two nights at Loew's L'Enfant Plaza Hotel close to the Mall, and see other sights in Washington by Tourmobile. Reservations and payments must be received at least ten days prior to arrival date.

Brochures on specific tours are available. For information, write Smithsonian Associates Travel Program, A&I 1278, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635.

Foreign Study Tours

Thomas Jefferson in England and France—July 9-30: His travels are retraced, with emphasis on country houses and gardens he admired; led by Professor Frederick Nichols of Charlottesville.

Aegean Sites of Civilization—October 7-29, 1978: A cruise on MTS *Argonaut* with Dr. Richard H. Howland, including Thrace, Istanbul, Troy, Ionia, Mt. Athos, Mistra, Thera, Crete and principal classical sanctuaries, leaving from and returning to Athens (waiting list). *Optional prelude may be the following:*

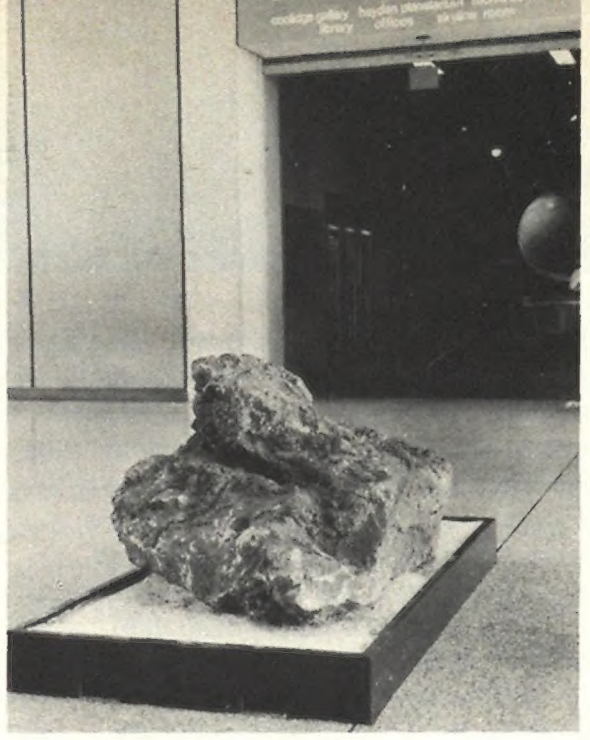
Nostalgic Orient Express—October 2-8, 1978: Vintage cars restored to superb condition, over original Simplon routing from Zurich to Athens (waiting list).

Iranian Archaeology—October 16-November 4: With Dr. Michael Roaf of Oxford, spend two nights in London, then Teheran, Shiraz, Persepolis, Pasargadae, Isfahan, Arak, Ecbatana, Kangavar, Bisitun, Kermanshah, Taq-I Bustan, Qasvin, Varamin, Rey and Mashhad.

For detailed information, write: Miss Bliss Schumann, Foreign Study Tours, S.I. 123, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5520.

By Dora Jane Hamblin

How lava from Vesuvius flowed to a Boston museum



The rock in place. Was it all worth it?

Few people wonder, as they walk awed or bored or exhilarated through the world's great museums, how all that stuff ever got there in the first place. This is too bad; visitors should know how much fun acquisitions can be.

Take, for example, the finding and transporting of a genuine, certified, two-ton piece of Vesuvius ("not too crumbly, a good solid chunk") to add atmosphere to a traveling show of Pompeiian artifacts.

The challenge arose when a voice from the Boston Museum of Science rattled my cage on a Sunday in Rome. Boston's Museum of Fine Arts had scheduled the Pompeii show (SMITHSONIAN, April 1978), so the Science Museum set out to correlate a geological display on "Vesuvius: The Volcano that Buried Pompeii." It thought that a piece of Vesuvius, installed along with a fragment of an ancient Egyptian sarcophagus, a chunk from Mont Blanc, some granite from the Antarctic, and other ancient detritus, would add to the general joy.

"One problem," the voice said. "We haven't a clue who owns Vesuvius."

Nor had I, but the challenge was stimulating. Checking my calendar to make sure it wasn't April 1, I assured the voice that I would try. Instantly it occurred to me that the quickest, most efficient method would be to pay some Neapolitan to steal a two-ton piece of Vesuvius and smuggle it to Boston. A simple business deal, concluded by the type of expert who could dismantle and make disappear a Liberty Ship from the Bay of Naples, circa 1944, or a jet fighter from the local airport, circa 1957. Both episodes may be apocryphal, but they are believed in by most locals and quite a few knowledgeable foreigners.

But which Neapolitan? A political reporter advised me to contact the Italian Foreign Ministry and "use my name," but the government fell within the week. A check with the American cultural attaché produced a loud cackle and a passable wisecrack about "the last of the red-hot lavas." The whole project spawned bad jokes. Friends to whom I moaned consoled me with "all the world loves a lava" and "Wanna piece of the Rock?"

Finally I called a friend in Naples, who went to the tourist bureau of Ercolano, the present city near ancient Herculaneum. There officials inured to outlandish requests directed her to a lava mine at Torre del Greco, where Vesuvius had hurled eruptions toward the sea for centuries. There, also, workmen showed her chunks which they had dynamited from the towering cliffs. She called back to tell me there were many suitable specimens from one to two tons.

"How big are they?" I asked fearfully.

"About the size of a Fiat," she replied.

Within weeks the voice from Boston arrived with body and we went off to audition lava chunks. We got lost only four or five times between Naples and the lava mine, and it took less than two hours to find what appeared an ideal chunk. To make sure, we chugged up now-dormant Vesuvius to its official observatory and brake-screeched back down again with a professor who examined our piece and found it good. It had the right things: a dense gray core with holes where gases had escaped, a visible admixture of minerals, a friable top layer of black stuff which looked frothy as a good lava should.

There remained two problems, the first of which was transport. There are, alas, very few ships still crossing the Atlantic, and a desperate scheme to take the rock by truck to Rotterdam and send it from there was frustrated by uncertain schedules and the need to have an accomplice there to accept it. Lengthy negotiations with Alitalia solved this. Our rock would join the 20th century by air.

Then there was its age. Our rock was a mere 350 years old, remnant of a 1631 eruption. We needed something 2,000 years old, and again the tourist bureau came to our rescue. A bearded young antiquities lover from the Pompeii office, an official excavator, a site guard, two dogs and three children accompanied us to a new excavation on the outskirts of Pompeii. There, workmen for a housing complex had unearthed a villa with remains of frescoed walls. Beside it were clearly striated layers of the ash and lapilli that buried the city in A.D. 79. Armed with plastic bags provided by the bureau, and string from a nearby bar, we scrabbled with fingernails and small sticks to collect samples labeled "ash," "lapilli," "underlying soil" and "overlying silt."

I envy museum-goers who will look—I hope not too casually—at our gorgeous rock in the Boston Science Museum. But even more I envy anyone who might have been in line behind the man from Boston when he produced, from beneath his rumpled shirts and toilet articles, those precious little plastic bags from Pompeii to show them to the man from customs.

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Seville
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